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Norstar-Norstar SRN and Tech Tips

Relevance	Document Number	Revision	Document Title	Date Posted	L
1.00	ITAS057	03-22-2004	Norstar KSU SP Versions	27-Mar-2004	
1.00	ITAS SRN-024 NA	03-2004	MICS/CICS 6.1 MR WI 6.05	23-Mar-2004	
1.00	ITAS TIP-306 NA	03-2004	CallPilot 1.0, 1.5 and 2.0 Initial Configuration will Delete the Application that is Not Chosen	09-Mar-2004	
1.00	ITAS TIP-305 NA	01-2004	Park and Page Engineering Rules for Norstar CallPilot 2.0	22-Jan-2004	
1.00	ITAS TIP-304 NA	12-2003	CallPilot 100/150 Continuously Reboots	09-Jan-2004	
1.00	ITAS TIP-303 NA	12-2003	CallPilot 100/150 Restore Fails	09-Jan-2004	
1.00	ITAS TIP-302 NA	12-2003	CallPilot 100/150 - Software Upgrade using a PCMCIA upgrade card	09-Jan-2004	
1.00	ITAS TIP-301 NA	12-2003	Windows Viruses Affect Norstar Voicemail	19-Dec-2003	
1.00	ITAS TIP-299 NA	12-03	Upgrading to MICS/CICS 6.1 with Existing T7316E Business Series terminals	10-Dec-2003	
1.00	ITAS Tip 298NA	10-2003	CallPilot Dial up Access using Windows 2000	23-Oct-2003	
1.00	ITAS Tip 295 NA	10-2003	Norstar VoIP Gateway Digit Manipulation Explained	23-Oct-2003	
1.00	ITAS TIP 294	10-2003	Norstar VoIP Gateway Installation/Configuration Tips	23-Oct-2003	
1.00	ITAS TIP-297 NA	07-2003	Centralized Answering Position (CAP) Module Unsupported Keys and Configurations	28-Jul-2003	
1.00	ITAS TIP-296 NA	12-2003	Boot Failure on CallPilot 100/150	19-Dec-2003	
1.00	ITAS TIP-289 NA	05-2003	Diagnosing Delayed Voice Messages on Norstar Voicemail	22-May-2003	
1.00	ITAS TIP-290 NA	1.0	MICS Upgrades from pre-4.0 to MICS 6.0	11-Apr-2003	
1.00	ITAS Tip-284 NA	1.0	Norstar CallPilot (rel. 1.5) Features	24-Feb-2003	
1.00	ITAS TIP-282 NA	1.0	Norstar Voicemail 4.1 Software Available on Floppy	12-Feb-2003	
1.00	ITAS TIP-279 NA	1.0	Norstar CICS KSU Resetting	06-Jan-2003	
1.00	Bulletin 001	1.0	Potential Shock Hazard, Caller ID Interface	02-May-2002	
1.00	Bulletin 004	1.0	Norstar ITAS Chargeable Support Plan Notice	02-May-2002	
1.00	Bulletin 041	1.0	COMPANION Coverage Guarantee Program	02-May-2002	

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






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 Additional
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 Numbers

1.00	ITAS TIP-256	1.0	Operating System Compatability	16-May-2002	
1.00	ITAS SRN-000	1.0	PRN Change	02-May-2002	
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1.00	ITAS SRN-006	1.0	MICS 2.0 Maintenance Release 5.1	02-May-2002	
1.00	ITAS SRN-007	1.0	Norstar StarTalk Flash Release 1.7	02-May-2002	
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1.00	ITAS SRN-009	1.0	MICS 2.0 Maintenance Release 5.7	02-May-2002	
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1.00	ITAS SRN-011	1.0	CICS 2.0 Maintenance Release 10.12	02-May-2002	
1.00	ITAS SRN-012	1.0	MICS 4.0 Maintenance Release 5.01	02-May-2002	
1.00	ITAS SRN-013	1.0	MICS 3.0 Maintenance Release 5.11	02-May-2002	
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1.00	ITAS TIP-034 CDN	1.0	StarTalk and Calling Line ID Information	02-May-2002	
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1.00	ITAS TIP-053 CDN	1.0	Norstar Call Park	02-May-2002	
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1.00	ITAS TIP-059 NA	1.0	Norstar Voice Mail/StarTalk Flash and Norstar Software Compatibility	02-May-2002	
1.00	ITAS TIP-060 NA	1.0	Norstar Voice Mail Fax-Back Available from Norstar ITAS	02-May-2002	
1.00	ITAS TIP-061 NA	1.0	Norstar Voice Mail/StarTalk Flash and Norstar Configuration Programming	02-May-2002	
1.00	ITAS TIP-062 NA	1.0	Norstar Modular ICS - 6.19 Software	02-May-2002	
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Norstar KSU SP Versions (case sensitive)

SP:	30	BJ		G	02
	30=BNR			Version to WI	
	06=ENC		Production Versions	translation	
	99=NA			A=0	
	(Trial Only)	3x8		B=1	
		NP = 3x8 DR5 ENG/FR (DR 5.1=M05 or greater)	E00, E07, M05, M07, M10	C=2	
		NQ = 3x8 DR5 ENG/SP (DR 5.1=M05 or greater)	E07, M05, M07, M10	D=3	
		6x16		E=4	
		DA = CDR2 ENG/FR		F=5	
		DB = CDR2 ENG/SP		G=6	
		MJ = CDR5-non DS ENG/FR	G01, G02, I00, H03, H04, J20, J21, L03, M10	H=7	
		MK = CDR5-non DS ENG/SP	J21, L03, M09	I=8	
		NS = CDR5-DS ENG/FR (DR 5.1=M05 or greater)	E00, E02, E04, E06, M05, M09	J=9	
		NT = CDR5-DS ENG/SP (DR 5.1=M05 or greater)	E08, M05, M09	K=10	
		8x24		L=11	
		EA = MDR2 ENG/FR	F02, F03, F06, F07, F08, F09	M=12	
		EB = MDR2 ENG/SP	F02, F03, F06, F07, F08, F09		
		MA = MDR3 ENG/FR	E17, E20, E22, G03, G06, G08, G09		
		MB = MDR3 ENG/SP	E17, E20, E22, G03, G06, G08, G09		
		GA = MDR4 ENG/FR	G00		
		GB = MDR4 ENG/SP	G00		
		MU = MDR5 ENG/FR (DR 5.1=M05 or greater)	G03, H04, H05, I00, J20, J24, L07, L11, M05, M10		
		MV = MDR5 ENG/SP (DR 5.1=M05 or greater)	J24, L07, L11, M05, M10		
		NA = MCTX ENG/FR (DR3 Centrex)			
		NB = MCTX ENG/SP (DR3 Centrex)			
		MG = MCTX+ ENG/FR (DR4 Centrex)	J22		
		MH = MCTX+ ENG/SP (DR4 Centrex)	J22		
		CICS			
		AI = CICS 1.0 NON-EXPANDED	H03		
		JS = CICS 1.0 EXPANDED	H03		
		Nr = CICS 2.0 NON-EXPANDED	J05, K01, K07, K11, K12		
		AG = CICS 2.0 EXPANDED	J05, K01, K07, K11, K12		
		BD = CICS 2.0 NON-EXPANDED IRAD-ON	J05, K01, K07, K11, K12		
		BC = CICS 2.0 EXPANDED IRAD-ON	J05, K01, K07, K11, K12		
		mp=CICS 4.0 RES IRAD-OFF	E12, F04		
		mo=CICS 4.0 RES IRAD-ON	E12, F04		
		mm=CICS 4.0 STD IRAD-OFF	E12, F04		
		mn=CICS 4.0 STD IRAD-ON	E12, F04		
		ZB=CICS 4.0 STD IRAD-ON+AA PROG PROMPTS	E12, F04		
		Ni=CICS 4.1 RES IRAD-OFF+AA PROG PROMPTS	G00, G04, G13, G15		
		Nh=CICS 4.1 RES IRAD-ON+AA PROG PROMPTS	G00, G04, G13, G15		
		Ne=CICS 4.1 STD IRAD-OFF	G00, G04, G13, G15		
		Nf=CICS 4.1 STD IRAD-ON	G00, G04, G13, G15		
		Ng=CICS 4.1 STD IRAD-ON+AA PROG PROMPTS	G00, G04, G13, G15		
		BY=CICS 4.2 RES IRAD-OFF+AA PROG PROMPTS (RP)	G00, G02, G06		
		BX=CICS 4.2 RES IRAD-ON+AA PROG PROMPTS (RIP)	G00, G02, G06		
		BU=CICS 4.2 STD IRAD-OFF (S)	G00, G02, G06		
		BV=CICS 4.2 STD IRAD-ON (S)	G00, G02, G06		
		BW=CICS 4.2 STD IRAD-ON+AA PROG PROMPTS (SIP)	G00, G02, G06		
		CH=CICS 6.0 RES IRAD-OFF+AA PROG PROMPTS (RP)	E02		
		CI=CICS 6.0 RES IRAD-ON+AA PROG PROMPTS (RIP)	E02		
		CE=CICS 6.0 STD IRAD-OFF (S)	E02		
		CF=CICS 6.0 STD IRAD-ON (S)	E02		
		CG=CICS 6.0 STD IRAD-ON+AA PROG PROMPTS (SIP)	E02		
		CU=CICS 6.1 RES IRAD-OFF+AA PROG PROMPTS (RP)	E06, G05(MR)		
		CV=CICS 6.1 RES IRAD-ON+AA PROG PROMPTS (RIP)	E06, G05(MR)		
		CR=CICS 6.1 STD IRAD-OFF+AA PROG PROMPTS (SP)	E06, G05(MR)		
		CT=CICS 6.1 STD IRAD-ON+AA PROG PROMPTS (SIP)	E06, G05(MR)		
		MICS			
		mc=MICS 1.0 (R1T1)	G02, G04, G08, G12, G13, G18, G19, G20		
		nl=MICS 1.0 (Centrex)	D02, D04, D06, D08		
		JB=MICS 1.1	M03, M07, M08		
		Hg=CDA MICS XC 1.0 or 1.1 (1.1 = M02 or greater)	1.0- I01, I02 1.1- M02, M03, M07, M08		
		Hg=MICS XL USA (no 1.1 version)	I01, I02		
		Up=USA MICS XL or XC 1.0 (1.1 = M02 or greater)	1.0- F02, F03, F04 1.1- M02, M03, M07, M08		
		AR=MICS 2.0	E05, F01, F05, F07		
		AP=MICS 2.0 XC-USA	E05, F01, F05, F07		
		AO=MICS 2.0 XC-CDA	E05, F01, F05, F07		
		me=MICS 3.0	F01, F02, F11		
		md=MICS 3.0 XC-USA	F01, F02, F11		
		mc=MICS 3.0 XC-CDA	F01, F02, F11		
		mt=MICS 4.0	E05, E08, F01, F03, F05		
		mk=MICS 4.0 USA XC	E05, E08, F01, F03, F05		
		ml=MICS 4.0 CDA XC	E05, E08, F01, F03, F05		
		Nd=MICS 4.1	G00, G04, G13, G15		
		Nc=MICS 4.1 USA XC	G00, G04, G13, G15		
		Nb=MICS 4.1 CDA XC	G00, G04, G13, G15		
		BK=MICS 5.0	G00, G02, G06		
		SH=MICS 5.0 USA XC	G00, G02, G06		
		SL=MICS 5.0 CDA XC	G00, G02, G06		
		Bw=MICS 6.0	E02		
		Bv=MICS 6.0 USA XC	E02		
		Bu=MICS 6.0 CDA XC	E02		
		CQ=MICS 6.1	E06, G05(MR)		
		CP=MICS 6.1 USA XC	E06, G05(MR)		
		CO=MICS 6.1 CDA XC	E06, G05(MR)		
		Example- SP:36COG05	MR = Maintenance Release		
		This translates to MICS 6.1 W16.05 Canadian XC Maintenance Release			

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CallPilot 1.0, 1.5 and 2.0 Initial Configuration will Delete the Application that is Not Chosen

Condition

During the initial configuration of a CallPilot, the system prompts you to select the base application that will reside on the unit. Once the option for "Voicemail" or "Call Center" is chosen, the system will remove the non-selected application. There is no method to reverse this initial setting. The only method is to request the unit be sent back to Nortel.

Problem recognition

This issue affects the CallPilot 100/150 Rel 1.0, 1.5, and 2.0

The CallPilot that has had the incorrect base application chosen by the installer will have to be returned to Nortel Order Management or Global Repair.

The issue will be fixed in CallPilot Rel 2.1

Technical Support

USA and Canada

Authorized distributors-Nortel Networks Global Network Technical Support (GNTS)

Telephone:

1-800-4Nortel (1-800-466-7835)

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Park and Page Engineering Rules for Norstar CallPilot 2.0

This tip outlines the engineering rules needed to configure the Park and Page feature of Norstar CallPilot 2.0. Park and Page is a new feature introduced in CallPilot 2.0 that uses the CCR Tree to allow a call to be parked and then announced into a paging zone, overhead paging system or both.

Condition

If Park and Page is incorrectly configured the AA (Auto Attendant) will stop answering calls. This occurs because the KSU Park time out returns the call to the CallPilot before all of the pages have completed.

Problem recognition

- AA is not answering lines
- Cannot edit the CCR tree that has a Park and Page menu point
- A reboot of the system will temporarily clear the problem

Resolution

The **Park time out** on the KSU must be set to value longer than the total time of the Page announcements + the intervals between retries + the time for the customized digits to play. The following formula can be used to calculate the Park and Page cycle.

Park and Page cycle = ((Park announcement + all the Digits for the park code)*(retry count+1))+(retry Interval*the retry count)

Example:

A=The Park page announcement is 10 seconds

B=Each digit in the customized digits uses 2 seconds (101 would be 6 seconds)

(if you use pre-recorded park code this value would be 1 second (for a total of 3 seconds for 101))

C=The retry interval is 15 seconds

D=The retry count is 2

$$((A+(3*B))*(D+1))+(C*D)$$

$$((10+(3*2))*(2+1))+(15*2)=78 \text{ seconds (which is the complete Park and Page cycle)}$$

Since the default Park Time Out on the KSU is 45 seconds, in this particular example, you will need to change the Park time out setting to 90 seconds (i.e. Greater than 78 seconds calculated above) to avoid the Park and Page issue on CallPilot

If you are using the alternate language you will need to do this calculation on both languages so that they are both within this rule.

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USA and Canada

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MICS/CICS 6.1 MR WI 6.05

Norstar MICS/CICS 6.1MR WI 6.05 were released to the installed base in March, 2004 as a Maintenance Release (MR). This new MR release incorporates several fixes to the KSU software identified in MICS 6.0/6.1 and CICS 6.0/6.1. A replacement process is in place and described below. This SRN is valid for one (1) year from the date of issue above.

Issues resolved in MICS 6.1 MR WI 6.05

- Call Duration Timer (F77) would reset to zero on calls that were placed or received on digital trunks. Each time a call was parked the timer would reset to zero resulting in a loss of running time. This was only an issue on calls that were on a digital trunk. The timer now continues until the call is released.
- Not able to reply to PRI SETUP messages when connected to DMS10 using NI-2 protocol. This issue was resolved by correcting the response to an incorrect IE in DISCONNECT and RELEASE.
- Some sites running either T1 or PRI have reported a high number of network related issues causing dropped calls. Updates to PRI-T1 and NAT1 firmware were made to raise our alarm thresholds.
- Some inbound calls to the Off-Core DTI (configured as an E&M) may not offer ringback. All channels are now offer ringback on the Off-Core DTI.
- There were a few incidences with Off-Core DTI lines that appeared as "Not a digital Line" when viewed in provisioning. The same system would also report "unequipped" on certain ports in maintenance. In maintenance ports 801-804, 809-812 and 817-820 were all usable ports showing "idle" however, ports 805-808, 813-816 and 821-824 were showing "unequipped". This was found to be an issue on systems that were upgraded from R1T1 or MICS 1.0 to Mics 6.0/6.1 however, if a startup was done after upgrading to Mics 2.0 or greater this was not an issue.
- When dialling out over a point to point T1 (configured as an E&M) some sites reported that a pause was required after dialling the destination code. A pause is no longer required after dialling destination code for point to point configurations.
- Updated the protocol table entries for NI-2 to reflect current international standards.
- Updated the tones file for better DTMF reliability when using the ASM.

- CLID information was not being transmitted to a remote KSU when a call was transferred from the main site by Centralized Voicemail. When received, CLID is now being passed to the remote KSU.
- Interoperability with Centigram voice mail system (CO based voicemail) has been introduced to deliver the "Message for You" display on Norstar sets when connected with analog lines.
- Call Monitoring - Monitored Agent's headset lamp stays lit when monitored call is released. The monitored agent's headset lamp now turns off when releasing from a monitored call.

Issues resolved in CICS 6.1 MR WI 6.05

- Call Duration Timer (F77) would reset to zero on calls that were placed or received on digital trunks. Each time a call was parked the timer would reset to zero resulting in a loss of running time. This was only an issue on calls that were on a digital trunk. The timer now continues until the call is released.
- Interoperability with Centigram voice mail system (CO based voicemail) has been introduced to deliver the "Message for You" display on Norstar sets when connected with analog lines.
- Call Monitoring - Monitored Agent's headset lamp stays lit when monitored call is released. The monitored agent's headset lamp now turns off when releasing from a monitored call.
- AA Greeting was not being restored when the job type "Restore ALL" was selected and was scheduled using a direct connection. This issue has now been resolved.

Replacement Process:

This program will be administered through Global Repair Services. Customers choosing to use this retrofit must call the Global Repair Customer Service Center.

USA customers call 1-800-4-NORTEL enter ERC 1143
Or Fax the required information to (615) 882-0218

Canadian customers call 1-800-4-NORTEL enter ERC 1145
Or Fax the required information to (416) 744-5206

Advance Replacement Procedure:

Contact the Global Repair Customer Service Center to request an Advance Replacement Number (RMA#). When requesting an RMA number, please have the following information from your Purchase Order (PO):

Announcement: SRN-024

Ordering code:

Item description: MICS 6.1 MR S/W

Ship to Address:

Distributor's bill-to address:

Contact name and phone number:

Upon arrival of the advance replacement equipment at the requested site, immediately return the defective equipment to the following address:

U.S. Distributors

Nortel Networks
640 Massman Drive
Nashville, TN 37210

Attn: RMA# _____

Canadian Distributors

Nortel Networks
30 Norelco Dr.
Westin, Ont. M9L 2X6

Attn: RMA# _____

All shipments must include a packing slip from the distributor with the following information:

Distributor's address

RMA number

Quantity being returned

Ordering code of items being returned

PO number

Ordering information

The ordering codes for the software upgrades are as follows:

Description		CPC Code	Engineering Code
CDA - MICS XC 6.1 MR	cartridge only	A0549152	NT7B66CR
USA - MICS XC 6.1 MR	cartridge only	A0549156	NT7B66CT
NA - MICS 6.1 MR	cartridge only	A0549157	NT7B66CU
CICS - RP 6.1 MR	cartridge only	A0549158	NT7B66CV
CICS - RIP 6.1 MR	cartridge only	A0549159	NT7B66CW
CICS - SP 6.1 MR	cartridge only	A0549160	NT7B66CX
CICS - SIP 6.1 MR	cartridge only	A0549161	NT7B66CY

Important Notes:

The RMA number must appear on the outside of all equipment that is being returned. If any advance-replaced equipment is not returned within 30 days to Nortel Networks, the distributor is invoiced for the advance replacement at a non-return billing price. The non-return billing price is determined by Nortel Networks Global Repair Services and is subject to change depending on equipment availability.

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CallPilot 100/150 Continuously Reboots

The 4 port Unified Messaging system; CallPilot 100 and the 8 port Unified Messaging system; CallPilot 150 can get into a state where the system reboots continuously. This condition is caused when configuring the IP address and the Gateway address of the unit such that these addresses are not in the same subnet range.

Condition

LANs are partitioned into subnets, which have 1 gateway (router) per subnet. Each device attached to the LAN has its own IP address and, in the case of the CallPilot, has its Gateway address programmed as well.

The particular subnet that the CallPilot belongs to is defined by its IP address and the subnet mask. The CallPilot's Gateway address must be within the same subnet as defined by the IP address and the subnet mask. If it is not, then the CallPilot will continually reboot.

Problem recognition

When entering these three parameters; Unit IP address, Gateway address, and Subnet mask on either the "Quick Install Wizard" web page or the "Unit Address Identification" web page, in CallPilot Manager, it is possible to enter a Gateway address that is not in the correct subnet. After populating these fields on the web page and pressing submit, a pop-up message will appear asking the administrator to re-power the CallPilot. After the CallPilot has been powered off and on, the CallPilot will start to boot but, an exception will occur, similar to the following:

```
Exception 1000
IP=FFC602D0 MSR=00001000
CR=288888EF XER=6000987F LR=FFC63FB0 CTR=00000000
R00=FFC63FEC 00067938 FFC75440 0000BDE8 FFC63F70 FFFFD8B4 FFC60330 7F000000
R08=2F418801 00000000 00000000 2F000000 00000005 0006DB04 00000001 00008000
R16=00000000 00000000 10000000 00000000 00000000 00000000 00000000 0000BD10
R24=017FFFFF 0000BD50 0000BD62 00000000 00000000 00000000 00005F0A 00000000
```

Work Around

If the CallPilot gets into this state, it is possible to correct the IP address or Gateway address by connecting to the CallPilot serial port. Immediately upon booting, the CallPilot pauses and the IP address information appears on the serial port. A statement appears; "To change any of this, press any key within 5 seconds". Pressing any key will take the administrator through the steps necessary to modify the IP address, Gateway address, or subnet mask. This

interface checks to make sure that the IP address, and Gateway address fall into the correct subnet otherwise the CallPilot will not accept the changes.

Fix

This problem appears in the CallPilot 1.5 release software and is found in all 1.5.32 software up to and including 1.5.32.07. It also appears in the CallPilot 2.0 release software and is found in all 2.0 software up to and including 2.0.49.

A fix has been incorporated into the 1.5.32.08 and the 2.0.51 software, and from then on, to check that the IP address and the Gateway address are within the same subnet while entering these values on either the “Quick Install Wizard” or on the “Unit Address Identification” web page in CallPilot Manager. This fix applies only to the IP address and Gateway address if they are entered as numerical IP address and not FQDN addresses.

Technical Support

USA and Canada

Authorized distributors-Nortel Networks Global Network Technical Support (GNTS)

Telephone:

1-800-4Nortel (1-800-466-7835)



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<http://www.nortelnetworks.com/support>

JE 12/17/03

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CallPilot 100/150 – Software Upgrade using a PCMCIA upgrade card

To perform these steps, you must first have the following hardware available:

- 1) A Windows laptop computer or desktop PC with the hardware capability to accept a PCMCIA/Flash card.
- 2) Must have first ordered/received the required upgrade PCMCIA card (Please order the **Upgrade Card Kit (NTAB9847/A0899143)**, which will allow you to perform a software upgrade to the current PCMCIA software card on your CP150 or CP100.

Note 1: A Back up of the CallPilot150/100, via the BRU utility should be performed on a regular basis and prior to any software upgrade activity.

Note 2: The backup should be saved to a laptop/computer or to network drive/server. A backup will retain the key codes of the CallPilot, as well as mailboxes, messages, and greetings on the system.

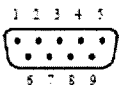
Boot Loader Upgrade:

Note 3: When upgrading software within the CallPilot 1.5.32 Stream, it is not necessary to upgrade the boot loader. If for any reason it becomes necessary to upgrade the boot loader, follow the steps outlined in the following process.

To verify the Boot Loader version the CallPilot 100/150 must be connected via serial cable to a Personal Computer running a terminal emulation package. Pin-outs and configuration parameters are listed below:

CallPilot 100/150 serial port

The following table shows the pin out for the CallPilot 100/150 serial port.

	Pin	Signal	Pin	Signal
	1	No connection	8	No connection
	2	Serial data in (RX)	7	No connection
	3	Serial data out (TX)	6	No connection
	4	No connection	5	No connection
	5	Ground		



Note: The location of the transmit (TX) and receive (RX) pins on your terminal can vary. Refer to your terminal or computer documentation to confirm pin locations.

Configuring the terminal

The terminal or terminal emulation program you use must be VT100 compatible and must support the ASCII Character set. If the terminal does not support the ASCII Character set, the text displays incorrectly.

You must configure your terminal to the following communications parameters:

- 9600 bits per second
- 8 data bits
- no parity
- 1 stop bit
- no flow control

For information about how to set these parameters, refer to the documentation for your terminal or terminal emulation program.

1. Reboot the CallPilot with the serial cable connected and observe the following detail, the Boot Loader version is the first heading output from the serial port as shown below:

```
CallPilot 150 Boot Loader V1.5.19
(C) 2001 Nortel Networks


-----
NETWORK INTERFACE PARAMETERS:
IP address on LAN is 192.168.110.10
LAN interface's subnet mask is 0xfffff00
HARDWARE PARAMETERS:
Serial channels will use a baud rate of 9600
This board's ethernet address is 0:60:38:BF:0:AA
CALLPILOT BOOTLOADER PARAMETERS:
Execution Mode: Load CallPilot
Source File System Parameters:
Device: ATA Disk
Source File List Name: filelst.lst
Destination File System Parameters:
Device: ATA Disk
File List Name: filelst.lst
Format Target Device: Y
Boot File Name: CallPilot.bin
After board is reset, start-up code will wait 2 seconds
-----
To change any of this, press any key within 2 seconds
```








2. Go to the Nortel Networks Norstar support page for Norstar CallPilot150 and download a copy of the zip file "1.5.32.0X_Bootloader_Norstar.zip", where X is the is the most current CallPilot 100/150 Boot Loader, from the web site to your desktop/folder of your laptop/computer. (***Note, not all CallPilot Versions will have an equivalent Boot Loader file available. Example Boot Loader for CallPilot 1.5.32.05 applies to both CP1.5.32.05 and CP1.5.32.06 if required.**)
3. Place the upgrade card (Upgrade Card Kit (NTAB9847/A0899143)) into a free PCMCIA slot of your laptop/computer.
4. The upgrade PCMCIA card, if inserted properly, should be administrable as a Removable Disk.
5. Access the Removable Disk via your PC operating system and delete all files, answer "OK" to any dialog boxes indicating that system files are being erased until the disk is free of all files.
6. Unzip the file "1.5.32.0X_Bootloader_Norstar.zip" on to the PCMCIA card by right clicking on the file and then choosing "Extract to..." and then choose to unzip the file to the drive letter of the PCMCIA card.
7. To check that the new software has been successfully unzipped to the card, please double click on the given drive letter of the PCMCIA card, via Windows Explorer, to confirm that the following files do exist on the card:

```
Bootloader.txt
bootRom.elf
CallPilot.bin
filelst.lst
```

8. Before removing the PCMCIA card from your laptop/computer, please note that you must first "Stop" the device, via the PCMCIA controller, to avoid corrupting the new upgrade software on the PCMCIA card.
9. Eject the upgrade PCMCIA card from your laptop/computer.
10. Remove power to the CallPilot 100/150. **Note: please make sure that a backup has previously been done for the CP100/150, via the BRU utility, before continuing with the next few steps.**
11. Remove the original PCMCIA card in the rear/bottom (Slot A) PCMCIA slot.

12. Insert the second/upgrade PCMCIA card, which contains the new Boot Loader software, into the rear/bottom PCMCIA slot of the CP100/150.

- 1) Power up the CallPilot100/150.
- 2) If there is no serial cable connected, LED status can be used to determine progress and completion states using the following legend (Note LEDs 1-4 will be observed on CallPilot 150, while LEDs 1-2 will be observed on CallPilot 100)
- 3) LEDs 1-4 or 1-2 will flash alternately during the copy/upgrade process, once completed the Operating Status LED denoted by the  icon will illuminate solid. If an Ethernet connection is present, the 10/100 LED will also illuminate solid at this time. (see the following table describing LED states and status).

LED	Description	LED	Description
 4	LED lights when TCM channel 4 is connected to the telephone system.	10/100	LED lights when the Ethernet connection is operating at 100 Mbit/s and blinks with Ethernet activity.
 3	LED lights when TCM channel 3 is connected to the telephone system.		LED lights when the CallPilot Mini/CallPilot 150 is operating.
 2	LED lights when TCM channel 2 is connected to the telephone system.		LED lights when an Ethernet connection is detected.
 1	LED lights when TCM channel 1 is connected to the telephone system.		Not used in this version of CallPilot Mini/CallPilot 150.

- 4) If using a serial connection to monitor status the following messages will be observed during the copy/upgrade process:

```

CallPilot 150 Boot Loader V1.5.19
(C) 2001 Nortel Networks

-----
NETWORK INTERFACE PARAMETERS:
IP address on LAN is 192.168.110.10
LAN interface's subnet mask is 0xffff00
HARDWARE PARAMETERS:
Serial channels will use a baud rate of 9600
This board's ethernet address is 0:60:38:BF:0:AA
CALLPILOT BOOTLOADER PARAMETERS:
Execution Mode: Load CallPilot
Source File System Parameters:
Device: ATA Disk
Source File List Name: filelst.lst
Destination File System Parameters:
Device: ATA Disk
File List Name: filelst.lst
Format Target Device: Y
Boot File Name: CallPilot.bin
After board is reset, start-up code will wait 2 seconds

-----
To change any of this, press any key within 2 seconds
Automatic Update Mode Enabled!
To Change Update Mode to Manual, press any key within 10 seconds
Updating in Automatic Mode!
Initializing ATA Disk... Done.
Initializing PCMCIA Stack ...SSInit: CS_Sockets - 2,Num_PWindows - 8
Card services Init complete found 2 sockets.
Done.
Initializing PCMCIA ATA Disk Drives ...SanDisk SDP 5/3 0.6
Atalnit: completed
Done.
Detecting ATA Cards...
Device found in Slot A:
Model: SanDisk SDCFB-256
Serial: 101904J080213219
Rev.: Vdg 1.23

```



```

Mounted 10.256
Loading 10.256/CallPilot.bin... Done.
Unmounting 10.256
Transferring control to the downloaded code
SSInit: CS_Sockets - 2,Num_PWindows - 8
Card services Init complete found 2 sockets.
SunDisk SDP 5/3 0.6
AtaInit: completed
Reading boot flash image... Done.
Programming boot flash... Done.

```

13. Once the Boot Loader upgrade is complete, remove power to the CallPilot 100/150 then remove the second/upgrade PCMCIA card from the rear/bottom (Slot A) PCMCIA slot. The Boot Loader upgrade may be verified via the serial port and a reboot of the CallPilot, the following message should confirm the change, this confirmation will require the original PCMCIA card be inserted in the rear/bottom (Slot A) PCMCIA slot.

```

CallPilot 150 Boot Loader V1.5.21
(C) 2001 Nortel Networks

-----
NETWORK INTERFACE PARAMETERS:
IP address on LAN is 192.168.110.10
LAN interface's subnet mask is 0xfffff00
HARDWARE PARAMETERS:
Serial channels will use a baud rate of 9600
This board's ethernet address is 0:60:38:BF:0:AA
CALLPILOT BOOTLOADER PARAMETERS:
Execution Mode: Load CallPilot
Source File System Parameters:
Device: ATA Disk
Source File List Name: filelst.lst
Destination File System Parameters:
Device: ATA Disk
File List Name: filelst.lst
Format Target Device: Y
Boot File Name: CallPilot.bin
After board is reset, start-up code will wait 2 seconds

-----
To change any of this, press any key within 2 seconds

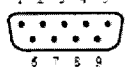
```


CallPilot 100/150 1.5.32.0X Software Upgrade:

Note 4: When upgrading software within the CallPilot 1.5.32 Stream, it is not necessary to utilize a serial connection. If for any reason it becomes necessary to view the upgrade messaging use the serial connection setup shown here. Pin-outs and configuration parameters are listed below:

CallPilot 100/150 serial port

The following table shows the pin out for the CallPilot 100/150 serial port.

	Pin	Signal	Pin	Signal
	1	No connection	6	No connection
	2	Serial data in (RX)	7	No connection
	3	Serial data out (TX)	8	No connection
	4	No connection	9	No connection
	5	Ground		

 **Note:** The location of the transmit (TX) and receive (RX) pins on your terminal can vary. Refer to your terminal or computer documentation to confirm pin locations.

Configuring the terminal

The terminal or terminal emulation program you use must be VT100 compatible and must support the ASCII Character set. If the terminal does not support the ASCII Character set, the text displays incorrectly.

You must configure your terminal to the following communications parameters:

- 9600 bits per second
- 8 data bits
- no parity
- 1 stop bit
- no flow control

For information about how to set these parameters, refer to the documentation for your terminal or terminal emulation program.








1. Go to the Nortel Networks Norstar support page for Norstar CallPilot150 and download a copy of the zip file "tftp15xxNAEnglishxxxxx.zip", which is the new/updated CallPilot 100/150 rls1.5 software, from the web site to your desktop/folder of your laptop/computer
2. Place the upgrade card (Upgrade Card Kit (NTAB9847/A0899143)) into a free PCMCIA slot of your laptop/computer.
3. The upgrade PCMCIA card, if inserted properly, should be administrable as a Removable Disk.
4. Access the Removable Disk via your PC operating system and delete all files, answer "OK" to any dialog boxes indicating that system files are being erased until the disk is free of all files/folders.
5. Unzip the file "tftp15xxNAEnglishxxxxx.zip" on to the PCMCIA card by right clicking on the file and then choosing "Extract to..." and then choose to unzip the file to the drive letter of the PCMCIA card.
6. To check that the new software has been successfully unzipped to the card, please double click on the given drive letter of the PCMCIA card, via Windows Explorer, to confirm that the following files and folders do exist on the card. ****Note the example shown is for CP1.5.32.03, the release15320(X).txt file should denote (X) as the version of CallPilot software that will be loaded onto the CP100/150 Platform.**



7. Before removing the PCMCIA card from your laptop/computer, please note that you must first "Stop" the device, via the PCMCIA controller, to avoid corrupting the new upgrade software on the PCMCIA card.
8. Eject the upgrade PCMCIA card from your laptop/computer.
9. Use Feature 985 and/or the CP web browser and note the Voicemail DN, Digits per Extension, and/or and Skillset CDNs if using Call Center functionality prior to powering down the CP100/150 Unit.
10. Remove power to the CallPilot 100/150. **Note: please make sure that a backup has previously been done for the CP100/150, via the BRU utility, before continuing with the next few steps.**
11. Please keep the original PCMCIA card in the rear/bottom (Slot A) PCMCIA slot. If the original PCMCIA has been removed for any reason, it must be inserted properly into the rear/bottom slot (Slot A) of the CallPilot 100/150 chassis.
12. Insert the second/upgrade PCMCIA card, containing the new CallPilot software, into the front/top (Slot B) PCMCIA slot of the CP100/150.
 - 1) Power up the CallPilot100/150.
 - 2) If there is no serial cable connected, LED status can be used to determine progress and completion states using the following legend (Note LEDS 1-4 will be observed on CallPilot 150, while LEDS 1-2 will be observed on CallPilot 100)
 - 3) LEDS 1-4 or 1-2 will flash alternately during the copy/upgrade process, once completed the Operating Status LED denoted by the ✱ icon will illuminate solid. If an Ethernet connection is present, the 10/100 LED will also illuminate solid at this time. (see the following table describing LED states and status).

<http://www.nortelnetworks.com/support>

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LED	Description	LED	Description
 4	LED lights when TCM channel 4 is connected to the telephone system.	10/100	LED lights when the Ethernet connection is operating at 100 Mbit/s and blinks with Ethernet activity.
 3	LED lights when TCM channel 3 is connected to the telephone system.		LED lights when the CallPilot Mini/CallPilot 150 is operating.
 2	LED lights when TCM channel 2 is connected to the telephone system.		LED lights when an Ethernet connection is detected.
 1	LED lights when TCM channel 1 is connected to the telephone system.		Not used in this version of CallPilot Mini/CallPilot 150.

13. If using a serial connection to monitor status the following messages will be observed during the copy/upgrade process:

```

CallPilot 150 Boot Loader V1.5.21
(C) 2001 Nortel Networks

-----

NETWORK INTERFACE PARAMETERS:
IP address on LAN is 47.102.71.111
LAN interface's subnet mask is 0xfffffe00
IP address of default gateway to other networks is 47.102.70.1
HARDWARE PARAMETERS:
Serial channels will use a baud rate of 9600
This board's ethernet address is 0:60:38:BF:0:AA
CALLPILOT BOOTLOADER PARAMETERS:
Execution Mode: Load CallPilot
Source File System Parameters:
  Device: ATA Disk
  Source File List Name: filelst.lst
Destination File System Parameters:
  Device: ATA Disk
  File List Name: filelst.lst
  Format Target Device: Y
  Boot File Name: CallPilot.bin
After board is reset, start-up code will wait 2 seconds

-----

To change any of this, press any key within 2 seconds

Automatic Update Mode Enabled!
To Change Update Mode to Manual, press any key within 10 seconds
Updating in Automatic Mode!

Initializing ATA Disk... Done.
Initializing PCMCIA Stack ...SSInit: CS_Sockets - 2,Num_PWindows - 8
Card services Init complete found 2 sockets.
Done.
Initializing PCMCIA ATA Disk Drives ...SunDisk SDP 5/3 0.6
SunDisk SDP 5/3 0.6
Atalnit: completed
Done.
Detecting ATA Cards...
Device found in Slot A:
  Model: SanDisk SDCFB-192
  Serial: 09280114970
  Rev.: Vdg 1.18
Device found in Slot B:
  Model: SanDisk SDCFB-64

```

```

Serial: 36308420811
Rev.: vde 1.10
Mounted 10.257
Partitioning
Partition 0: 16 Mbyte
Partition 1: 167 Mbyte
Formatting 10.256 as a DOS volume
Mounted 10.256
Copying 10.256/filest.lst... 23193 bytes. Done.
Copying 10.256/access2/Filepool/0/PA000000.000...2388216 bytes. Done.
Copying 10.256/access2/Filepool/0/PA000000.020...3198228 bytes. Done.
Copying 10.256/access2/runtime/access2.ini... 46694 bytes. Done.
Copying 10.256/access2/runtime/alarm0.dat... 5771 bytes. Done.
Copying 10.256/access2/runtime/CPTDEFS.DAT...13640 bytes. Done.
Copying 10.256/access2/runtime/dvcloss.dat... 12524 bytes. Done.
Copying 10.256/access2/runtime/silence.vox... 3984 bytes. Done.
Copying 10.256/access2/runtime/tonedefs.dat... 9373 bytes. Done.
Copying 10.256/CallPilot.bin...
.
.
.
** Note that an extensive amount of files will be copied during this time.
The overall process requires approximately 10 to 15 minutes
.
.
.
.
10.256/CallPilot.bin... Done.
Unmounting 10.256
Transferring control to the downloaded code

I-Cache ON, D-Cache ON
Downloaded OS and application executing from RAM
Memory Test Completed Successfully
Starting root(RAM)
Initializing D-channel driver
Initialized for 8 channels
Disk volume 3.0.0, initialized...
Initializing ATA Disk... Done.
Initializing PCMCIA Stack ...SSInit: CS_Sockets - 2,Num_PWindows - 8
Card services Init complete found 2 sockets.
Done.
Initializing PCMCIA ATA Disk Drives ...SunDisk SDP 5/3 0.6
SunDisk SDP 5/3 0.6
AtaInit: completed
Done.
Detecting ATA Cards... Card(s) detected
Verifying 7.0
PPP: Using hardcoded ip address 192.168.0.2
PPP: Username is CallPilot
PPP: Password is administrator
PPP: Adding PPP NL...
Standard output device initialized...
Pseudo device initialized...
7.1\safe not found
TFTP device initialized...

Login:

Type "test" to stop auto boot

Starting Access/2 and Voicemail
SysConfig file does not exist. Use default!!!
Opening DSP Msg logfile
DSP[0]: 1.50.51.A4 June 24, 2003
DSP[1]: 1.50.51.A4 June 24, 2003
DSP Abstraction Layer Binding to port 5001
DSP Abstraction Layer Accepting...
Language Debug: Reading '7.1\access2\runtime\alarm0.dat'.

```

```

Read language file '7.1\access2\runtime\alarm0.dat'.
Loaded 1 of 1 language file(s). Default language: 0 (hex).
Curr File Pool Path='7.0\access2\FILEPOOL0\*.**'
Curr File Pool Path='7.1\access2\FILEPOOL0\*.**'
OSA DBG: pSOS_ERR: ResumeTask - t_resume rc =15
TCM 1: Channel 0: UP
CH0 is opened.
TCM 2: Channel 2: UP
CH2 is opened.
TCM 3: Channel 4: DOWN
TCM 4: Channel 6: DOWN
DCHCNTRL - DCH0 Reader created
0:parser sync'ed up
DCHCNTRL - DCH1 Reader created
2:parser sync'ed up
DCHCNTRL - DCH2 Reader created
dchMon: Initialized FumpSTM of Dchannel No : 1
DCHCNTRL - DCH3 Reader created
DCHCNTRL - Number of D-channels trying :4
dchMon: Initialized FumpSTM of Dchannel No : 2
DCHCNTRL - Active channel = 2 D Channel State = 255

dch: channel 4 Msg Len 99 Update Board to Access

dch: channel 4 Msg Len 99 Update Board to Access
D-channel No. 1 is working
D-channel No. 2 is working
Got KSU Version from functerm: ---30CPE06H*
***>>>TelInit telNumITInfoElemBytes 5

*****
*           *
* ! R E A D Y ! *
*           *
*****

Loaded 1 of 1 language file(s). Default language: 0 (hex).
Access logging disabled
Access up in 71 seconds
Starting voicemail
Country: NORTH AMERICA
Alternate QZ Mapping: 0
AMIS Address Start Key: #
Application SName: VM
Default Language {enum from country.c}: 0
Enable TT Gate: 0
Group List Lead Digit: 9
Key Language Toggle: 9
Key Operator Revert: 0
Login Mailbox Key: *
Local Number Length: 7
Maximum CLID display: 7
Maximum CLID entry: 16
Maximum Network DN Length: 16
Maximum Packet Network DN Length: 16
National Number Length: 10
SC Maximum Lines 10 20: 334
TA Admin Name: Voice Mail
LOG_EMERG: NVM SoftFax ready
telLocRegister: NumITInfoElem 5, 5
WARNING: osSetCurrentDrive is not implemented
WARNING: osSetCurrentDrive is not implemented
Voicemail CORE Ready...

```

14. Once the upgrade is complete, remove power to the CallPilot 100/150 then remove the second/upgrade PCMCIA card from the front/top (Slot B) PCMCIA slot.

15. Apply power to the CallPilot 100/150 unit and wait until the boot completes, and then verify operation of the unit using the following steps..
16. Once the CallPilot 100/150 boots up, please check to make sure VM is up by doing a Feature 983 via a telset on system.
17. **Note:** If there is an issue with the VM (F983) not coming up, after a reasonable amount of time and the Feature 983 shows as inactive, please perform a "F**XFTEST". Then test and remove any feature codes that list as "inactive". The CallPilot must then be rebooted
18. Use Feature 985 and/or the CP web browser and verify retention of the Voicemail DN, Digits per Extension, and/or and Skillset CDN(s) if using Call Center functionality.

Technical Support

USA and Canada

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Telephone:

1-800-4Nortel (1-800-466-7835)



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<http://www.nortelnetworks.com/support>

JC 12/17/03

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Windows Viruses Affect Norstar Voicemail

The Wormblaster and Welchia viruses found on Windows PCs can affect the operation of some of the Norstar Voicemail options.

Condition

Desktop Messaging, Voicemail Manager, Mailbox Manager and Operator Manager applications will stop functioning when the network that the NAM is connected to is attacked by these viruses. In addition, an infected Windows PC connected directly to the NAM through the NIC card, serial port or modem will affect the applications. The OS/2 operating system on the NAM is not infected with the virus but one of the components is affected. That component is DCED (Distributing Computing Environment Daemon) which is the OS/2 implementation of RPC (Remote Procedure Calls).

Problem recognition

When the applications mentioned above suddenly stop functioning then the viruses have appeared on the network. If the NAM has a monitor connected to it, the Window List can be selected from the taskbar. The Window List should contain a process called DCED.exe. This process will be missing. If you are familiar with the process status command (psstat), it can be run from a command line and it will also indicate that DCED.exe is missing. In addition, examining the contents of the fatal.log file located in `c:\opt\dcelocal\var\svc` directory will show when DCED.exe failed because of the attack. The message will look similar to this :

```
yyyy-mm-dd-hh:mm:ss 030-04:00I----- dced FATAL rpc rcv  
D:\U\BUILD\BUILD\SRC\RPC\RUNTIME\CNRCVR.C 466 0x002d1d28 msgID=0x16C9A15C  
(rpc__cn_network_receiver) Unexpected exception was raised
```

Resolution

Rebooting the NAM will cause DCED.exe to run again or DCED can be started by using the following command- `C:\start /min dced.exe -b`

But if the viruses are still present in the network (or on the PC connected to the NAM) DCED will fail within hours. The only method to address this issue is to clean the PCs of the virus and ensure they have the appropriate Microsoft patches. The network firewall should be setup to block the appropriate TCP/IP ports as per security bulletins.

Virus software can be used to clean the network. Microsoft has a scanning application (kb824146Scan) to check the patch status on the Win NT, 2000 & XP PCs.

<http://support.microsoft.com/default.aspx?scid=kb:en-us:827363>

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GR 12/16/03

**ITAS TIP - 299 NA
December 2003**

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**Upgrading to MICS/CICS 6.1 with Existing T7316E Business Series
Terminals**

The T7316E Business Series Terminal (BST) was introduced in June of 2003 in conjunction with the MICS/CICS 6.1 program. The MICS/CICS 6.1 software provides enhanced button capability as well as enhanced indicators for memory, line and intercom buttons on the T7316E BST. While these changes are supported on the T7316E set they will not be visible or available to the customer until they have upgraded the core software to the MICS/CICS 6.1 level. Prior to the upgrade to the MICS/CICS 6.1, the T7316E sets will have button assignments in accordance with the T7316 default button assignments. Documentation outlining the deltas between the T7316E and T7316 button programming are included with the T7316E sets and in this communication.

When upgrading to MICS/CICS 6.1, the T7316E will adopt the new functionality and button locations of the T7316E, causing the user programmed buttons to return to the T7316E defaults.

Only buttons programmed using Feature *1, 2 and 3 will be required to be reprogrammed. All system data, for example, line appearances and intercom paths, will be retained. However, please refer to the following pages for default button assignments.

With the use of Desktop Assistant, the labels for the T7316E sets will be required to be reprinted to show the changes in button configuration.

Click on the below link to download Desktop Assistant.
<http://www.nortelnetworks.com/support>

Please see the following pages for default buttons assignments for the differences.

T7316 Business Series Terminal button defaults

Button mapping for the T7316 BST telephone is unique. Although the button is patterned after the M7310, the T7316 does not have a second level on its upper button group. Because of this, the numbering for the T7316 is not consecutive. Refer to the diagrams below.

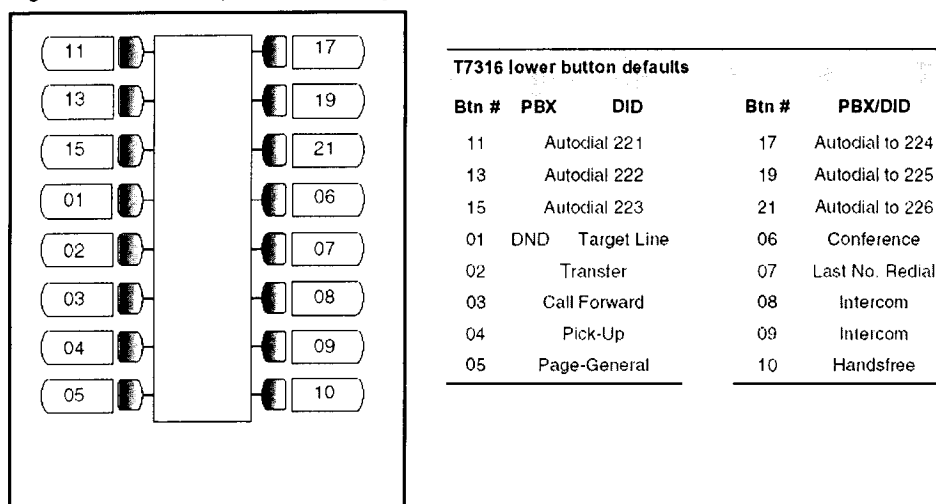
Internal autodial numbers are assigned to buttons 11, 13, 15, 17, 19, and 21 on the main button group. Programmed external line buttons appear in descending line order starting with button 01. When more than five external lines are programmed, assignment continues on button 06 and then down the row to button 10.

The following figure shows the default button number assignments on the T7316 telephone.

T7316 BST upper buttons (PBX and DID) default button settings

	Btn #		Btn #
Autodial to 227	23	31	Autodial to 231
Autodial to 228	25	33	Autodial to 232
Autodial to 229	27	24	Autodial to 239
Autodial to 230	29	26	Autodial to 240

Figure 114 T7316 telephone button assignment



T7316E Business Series Terminal button defaults

The default button assignments for the T7316E Business Series Terminal (BST) depend on the template applied. Refer to your Programming Records to identify the current button programming for each telephone or group of telephones.

This telephone has individual handsfree, mute and headset buttons located under the dialpad. Handsfree must be set to automatic for these buttons to work.

The current incoming call on this telephone defaults to the voice path last used. For example, if you answered the previous call using your headset, the next call will come in over your headset.

Line numbering starts on button 09.



Note: The T7316E BST telephone buttons are mapped differently than the T7316 BST telephone.

T7316E BST upper button defaults, PBX and DID templates

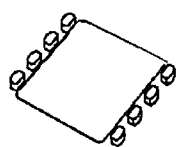
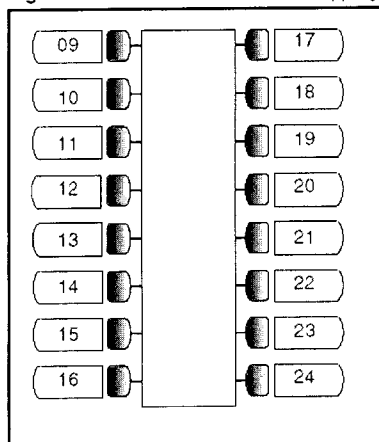
	Btn #		Btn #
Contrast	01		05 Blank
Show time	02		06 {DID only} Sys Park
Blank	03		07 Send Message
Blank	04		08 Speed dial

Figure 113 T7316E lower button mapping



T7316E BTS lower button defaults

Btn #	PBX	DID	Btn #	PBX/DID
09	Sys Park	Target line	17	Call Timer
10		Saved No.	18	Ring Again
11		Call Fwd	19	DND
12		Pick-up	20	Transfer
13		Page	21	Last No.
14		Transfer	22	Voice call
15		Time/Date	23	Intercom
16		Receive Msg.	24	Intercom

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CallPilot Dial up Access using Windows 2000

The documentation for the Norstar CallPilot 100 /150 contains some statements that make it difficult to set up the Windows 2000 dial-up access. The following steps should be used to access the Norstar CallPilot 100/150 from a Window 2000 PC:

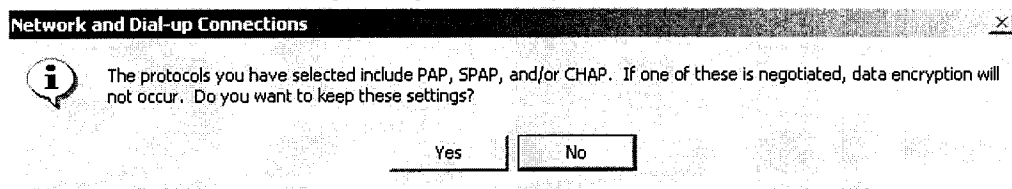
Creating a Dial-Up Networking connection on Windows 2000

1. Click the **Start** button and then click **Programs**.
2. Click **Accessories** and then click **Communications**.
3. Click **Network and Dial-Up Connections**.
4. The Network and Dial-Up Connections dialog box appears.
5. Double Click the **Make New Connection** icon.
6. The Network Connection Wizard appears Click **Next**.
7. Select the **Dial-up to private network** option.
8. Click the **Next** button.
9. In the **Telephone number** box enter a telephone number click **Next**. Note: It does not matter what telephone number you enter in this box because the number is not used for the connection to the CallPilot system.
10. Create connection For all users
11. Click the **Next** button.
12. Enter a name for this connection.
13. Click the **Finish** button.

Configuring the Dial-Up Networking TCP/IP parameters on Windows 2000

14. The new connection you just created should now be displayed. If it is not displayed Right click on the Dial-up Networking connection you created for CallPilot.
15. Click on **Properties**
16. Click the **Configure** button.
17. Clear the Check boxes in the Hardware Features section.
 - Enable hardware flow control**
 - Enable modem error control**
 - Enable modem compression**
 - Show Terminal window**
18. Check that **enable modem speaker** is checked so that you can hear the modem negotiation.
19. Click the **OK** button.
20. Click the **Security** tab.
21. Select the **Advanced (custom settings)** option.
22. Click the **Settings** button.
23. Verify that Data encryption from the drop down box is set to **Optional encryption (connect even if no encryption)**
24. Select the **Allow these protocols** option.
25. Select the **Unencrypted password (PAP)** option and clear the other options.

26. Click the **OK** button. A warning message will be display as follows.



Click on **Yes**

27. Click the **Networking** tab.
28. In the Type of dial-up server I am calling drop list, select **PPP: Windows 95/98/NT4/2000, Internet**.
29. Click the **Settings** button.
30. Verify that the following options are selected:
- Enable LCP extensions**
 - Enable software compression**
 - Negotiate multi-link for single link connections**
31. Click the **OK** button.
32. Select the **Internet Protocol (TCP/IP)** option.
33. Click the **Internet Protocol (TCP/IP)** heading and then click the **Properties** button.
34. Select the **Use the following IP address** option.
35. Enter an IP address that is on the same network segment as the CallPilot system, for example, if the CallPilot's IP address is 192.168.0.1, then you would enter something like 192.168.0.2 in to the IP address box.
36. Click the **OK** button to close the Internet Protocol (TCP/IP) properties.
37. Click the **OK** button to close the Dialup properties.

Note: The IP address you enter here is used to identify your computer during the modem connection. It does not affect the LAN configuration of your computer.

Installing the Nortel Networks Modem Configuration Utility

Your modem requires a special configuration to access the Norstar CallPilot 100/150 modem. The Modem Configuration Utility allows you to easily switch between the configuration for the CallPilot modem and the configuration for normal modem use. Each time that you run this application you will need to reboot your PC for the changes to take effect.

To install the Nortel Networks Modem Configuration Utility:

1. Load the CallPilot CD in the CD-ROM drive of your computer.
2. Open the CD folder and open the **Optional Software** folder.
3. Open the **Modem Configuration Utility** folder.
4. Copy the file **CPsecureModem.exe** to a folder on your computer.
5. Remove the CallPilot CD from your computer.
6. Double click on the **CPsecureModem.exe** to run the tool. See the section Configuring your modem to access the CallPilot modem

Enabling the CallPilot modem

You must enable the CallPilot modem locally before you access the system using the modem.

Enabling Modem access using a telephone

Follow this procedure to enable the Modem access password using a telephone.

1. Press **6 9 8 3**.
2. Enter the system administration mailbox number and password.
3. Press **4**.
4. Press **NEXT**.
5. Press **NEXT**.
6. Press **OK**.
7. Press **CHNG**.
8. Enter the new Modem access password and press **OK**.
Note: If you do not enter a password, Modem access is disabled.
9. Re-enter the new Modem access password and press **OK**.
10. Press **END**.

Log:
QUIT RETRY OK

Admin
MBOX AA OTHR

Voice Mail:Y
CHNG NEXT

Dir avail:Y
CHNG NEXT

Match:Lastname
CHNG OK

Modem access:N
CHNG OK

Pswd:
RETRY OK

Again:
RETRY OK

Enabling Modem access using CallPilot Manager

1. Log on to CallPilot Manager.
2. Click the **Configuration** heading.
3. Click the **Access Passwords** link.
4. Enter a password in the **Modem Access** box.
5. Enter the password again in the **Confirmation** box.
6. Click the **Submit** button. CallPilot is now ready to accept Modem access.

Connecting to the CallPilot system

To connect to the CallPilot system you must:

- configure your modem to access the CallPilot modem
- connect to the CallPilot modem

Configuring your modem to access the CallPilot modem

The CallPilot modem requires a special configuration for access. This requirement helps prevent unauthorized access to the CallPilot system.

To configure your modem:

1. Open the folder that contains the Nortel Networks Modem Configuration Utility. (CPsecureModem.exe).
2. Double click **CPsecureModem.exe**. The Modem Configuration Tool opens. The current setting of the Modem will be shown at the **bottom of the dialog window**.

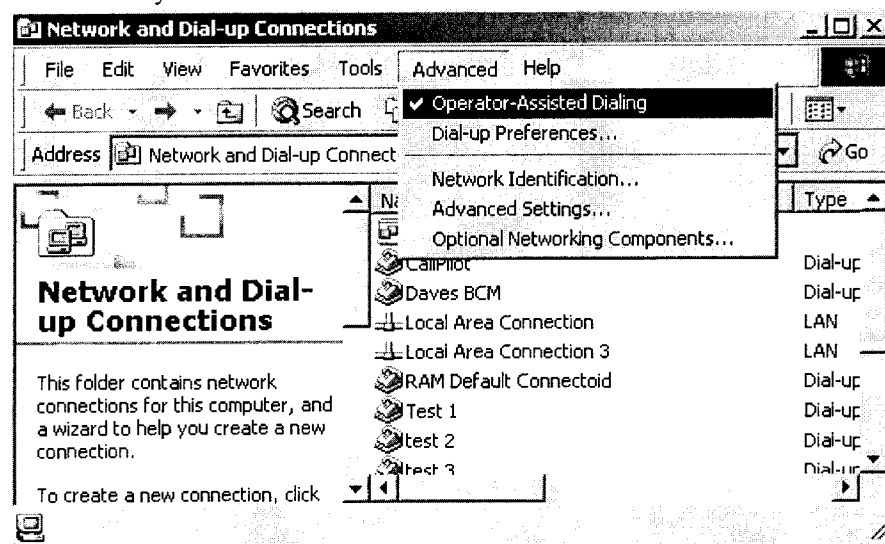
3. Select the **Configure Modem for Secure Access** option.
4. Click the **OK** button.
5. If you are using Windows NT or windows 2000, restart your computer. After your computer finishes restarting, the modem is ready to connect to the Norstar CallPilot 100/150 modem.

Note: you will need to set the modem back to normal mode if you want to connect to a system other than the CallPilot see the section setting your modem to Normal mode.

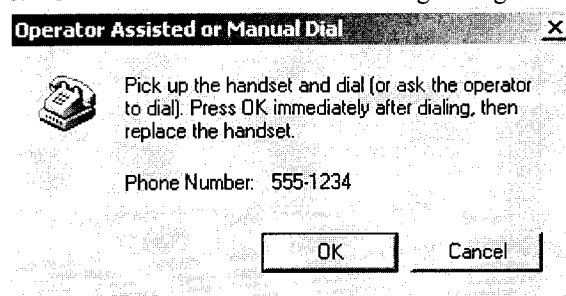
Connecting to the CallPilot modem

To connect to the CallPilot system:

1. Use the **Start** menu to open the Dial-Up Networking window.
2. On the **Network** and Dial-up Connections window select **Advanced**
3. From the advanced list select Operator-assisted dialing if there is a check mark this option is already selected.



4. Double click the Dial-Up Networking connection you created for the CallPilot system.
5. Set the User Name to **CallPilot**
6. Set the Password to **administrator**.
7. If there is a Domain box, set the Domain to the IP address you entered for the Dial-Up Networking TCP/IP parameters of this connection.
8. Click the **Dial** button. The following Dialog box will be displayed



9. Use the telephone connected to your computer modem to dial the CallPilot system you want to access. You need to be answered by the voicemail.
10. When the voicemail answers log into the administrators mail box using the dialup password. When the voicemail answers press **, the System Administrator mailbox number and the

dialUp password that you programmed on the CallPilot then #. For example, **10021111#
Mail box is 1002 and dialup password is 1111

11. If there are enough CallPilot resources to make a modem connection, the system starts counting down from 5.
12. When the system reaches 1, click the **Connect** button and hang up the telephone hand set. A message appears when the connection is established.

Note: If you are in Europe or Australia, press 88, the System Administrator mailbox number and the dialup password then #. For example, 8810021111#.

Tip If the prompt **one moment please** plays, the system currently does not have sufficient resources to access the modem. Wait until the count down reaches 1 before you click the Connect button. If the prompt **one moment please** plays several times and then the prompt **exiting the system, goodbye** plays, try calling again.

Your computer is now connected to the CallPilot system. You can access the web interface now.

Accessing the CallPilot system using CallPilot Manager

1. Start your web browser.
2. In the URL field, enter **http://<Callpilot IP address>**.
3. Log on to CallPilot Manager

When you are finished with the CallPilot system, end your connection to the CallPilot modem.

Important Note: After you are finished accessing the CallPilot system, you must reconfigure your modem if you want to use it for normal modem connections this requires a reboot of your PC.

Configuring your modem for normal modem connections

To configure your modem for normal connections:

1. Open the folder that contains the Nortel Networks Modem Configuration Utility (CPsecureModem.exe).
2. Double click **CPsecureModem.exe**. The Modem Configuration Utility opens.
3. Select the **Configure Modem for Normal Operation** option.
4. Click the **OK** button.
5. If you are using Windows NT 4.0 or Windows 2000 restart your computer. After your computer finishes restarting, the modem is ready for normal modem connections.

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ITAS TIP - 295 NA
October 2003

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Norstar VoIP Gateway Digit Manipulation Explained

The Norstar VoIP Gateway is an external hardware device that brings IP telephony trunking to Norstar telephone systems. IP telephony trunking allows users to transmit voice calls to other IP trunking enabled telephone systems using a data networking connection. Another example of an IP Telephony enabled system is Nortel's Business Communications Manager (BCM).

The Norstar VoIP Gateway contains a number of very powerful and useful utilities for the manipulation of source and destination telephone numbers used on a call by call basis. Understanding how the manipulation works and what circumstances would need digit manipulation is key to setting up the overall network dialing plan.

Basic Concepts

The Norstar VoIP Gateway uses four manipulation tables:

1. IP -> Tel Source Numbers
2. Tel -> IP Source Numbers
3. Tel -> IP Destination Numbers
4. Digit Delivery (IP -> Tel Destination Numbers)

In addition, similar tables are used for routing decisions in the gateway:

1. Tel -> IP Routing table
2. IP -> Hunt Group Routing table.

These routing tables do not use any manipulation features but simply allow calls to be directed properly, as determined by the dialed digits.

Each of these will be explained further in sections to follow. Each manipulation table utilizes the same basic set of rules.

Digit Parsing

In order to determine whether or not a particular call requires digit manipulation or routing, the number (source or destination) is parsed to see if it matches the digit rule in the table (Dialed number, Source Number, Prefix). Digit parsing options include:

- Digits: Numerals from 0 – 9.
- Wild card: * means any number of digits of any type
- Don't Care: X means any single digit of any type
- Terminator: # indicates the end of the digit string (no digits follow)
- Range: [x - y] indicates the range of numbers from x to y inclusive
- Range: [x,y,z] indicates the value may be any of the indicate list

For example:

- [5551200 – 5551300] represents all of the numbers from 5551200 to 5551300 inclusive.
- [3,4,5]xxx# would be a 4 digit number beginning in either 3, 4 or 5.
- 123[100 -200]* would be numbers that start with 123100 to 123200 inclusive.

Number Classification – NPI / TON

In the tables that provide manipulation from Tel -> IP, you may specify the NPI / TON to be used in the H.323 message coding. This classification is important in some gatekeepers (Radvision) in order to provide address resolution. The NPI / TON used in your setup message must be the same as that used in registration by the destination gateway.

NPI / TON is a term originally used with Q.931 which is the basis for H.323. Choices for Numbering Plan Indicator (NPI) are:

- Unknown
- Private
- Public (e164)

Public is chosen if the number is part of the PSTN numbering plan which is used for national dialing.

Private is used to represent a numbering plan that is used in a private voice network.

For more information on Numbering and Dial Plans, refer to Appendix A of “Norstar VoIP Gateway Configuration Guide”.

Stripping and Adding Digits

The tables provide the ability to strip leading digits from the digit string (number of stripped digits) and to add new leading digits (prefix to add).

Destination Number Tel -> IP

This table is used to manipulate the digits that are dialed into the Norstar VoIP Gateway prior to setting up the call. Numbers that are dialed by the user are first checked in this table to see if there is a match. If there is a match, the values entered into the table are used to manipulate the digits. This manipulation can be done either before or after a routing decision is made for the call. This is programmed in “Protocol Management / Protocol Definition” by changing the setting for “Tel to IP Routing Mode”. In general, a routing decision will be made before manipulation.

Uses for manipulation can be as follows:

- To strip dialing plan digits from the number. For example, a user might dial 6 in front of each number in order to indicate a private network number. If this leading digit is not removed by Norstar routing, it may be removed here before the call is setup. This would allow the destination number to be understood by a gatekeeper or by the destination gateway (for routing to the correct output hunt group).
- Assignment of NPI / TON. The Norstar VoIP Gateway can use a single global setting for NPI / TON classification or it can use the setting in this table on a call by call basis. Control for this is done using “Protocol Management / Protocol Definition / Destination Number Encoding Type”
 - E.164: Use e.164 for all destination coding in both IE and UUIE.
 - H.323-ID: Do not use a destination number but use only the H.323-ID text string. Note that if there is not text string programmed, the gateway will convert the dialed digits into a text string and use that as the H.323-ID.
 - E.164&H.323-ID: Use both of the above.
 - PartyNumber: Use the NPI / TON classifications on a per call basis as determined by the manipulation table. If there is not an entry in the table for a particular call, it will use E.164.

Digit Delivery

This table is used to manipulate the destination digits in calls that the Norstar VoIP Gateway receives. This feature is used in conjunction with Auto Answer trunks on the Norstar to automate dialing directly into a target

line. When an incoming call is matched into the Digit Delivery table using the parsing rules (called number), the table allows leading digits to be stripped and new prefix digits to be added.

New prefix digits can include any of the numerals 0-9. They also include the following special characters:

- “D”: This character may only be used as the first character in the prefix string and must be used as the first character when configuring for target line calls. It will instruct the gateway to wait for dial tone before dialing out any further digits.
- “P”: This character instructs the Norstar VoIP Gateway to pause 1.5 seconds before proceeding with any further digits. Pauses of longer than 1.5 seconds can be achieved by using multiple P’s. Dial tone detect (D) should be used as the first character for target lines. Pause may be used for subsequent delays in digit delivery.

If a call matches a rule, the manipulation is first performed and then the resulting digits are dialed out of the analog port once the port goes off hook. Note that in most cases, the first digit of “D” must be added to the prefix in order for the Norstar VoIP Gateway to first wait for dial tone from the target Norstar. Additional digits may be added as necessary to access line pools, etc. For example, the digit “9” may be added if the call is a toll bypass call reaching through the target Norstar into the PSTN.

Source Number Tel → IP

This table may be used to manipulate or assign NPI / TON values to the source number used for the call setup. Generally speaking, this table will not need to be used that often given that the source phone number is a statically set parameter for the gateway.

Source phone numbers are entered into the Norstar VoIP Gateway in the “Protocol Management / Channels – Hunt Group” table. In that table, a phone number can be entered for each port of the Norstar VoIP Gateway.

This number may be different from port to port, which would be appropriate for a system that uses key system style of line appearances, or could be the same, which would be appropriate for a system that uses the PBX system of line pools.

The source number in an H.323 message is really only used for one thing, which is to identify the caller for use in calling line ID presentation. As such, manipulation of the source digits would normally only need to be done in order to change the digits so that they will be in a more appropriate form for calling line ID.

For example, the Norstar VoIP Gateway may be setup so that it reflects the telephone number used in the private dialing plan. Source manipulation can then be used to transform that private number into a public dialing plan number that represents the normal PSTN number that would be used to dial the location.

The source manipulation table may also be used to assign a specific NPI / TON classification to the calling number. Setting an NPI / TON can be done globally or values used in this table can be applied. Control for this is done using “Protocol Management / Protocol Definition / Source Number Encoding Type”

- E.164: Use e.164 for all destination coding in both IE and UUIE.
- H.323-ID: Do not use a destination number but use only the H.323-ID text string. Note that if there is not text string programmed, the gateway will convert the dialed digits into a text string and use that as the H.323-ID.
- E.164&H.323-ID: Use both of the above.
- PartyNumber: Use the NPI / TON classifications on a per call basis as determined by the manipulation table. If there is not an entry in the table for a particular call, it will use E.164.
- PartyNumber & H.323-ID: Uses NPI / TON from the table as well as the H.323-ID

Source Number IP → Tel

This table may be used to manipulate the source number of the call at the destination gateway prior to seizing the outgoing analog line and ringing the attached Norstar. Manipulation of the digits in this table would only be done if there is a need to alter the appearance of the calling party number for calling line ID purposes.

For example, you could choose to add dialing plan information to the calling party number so that a return caller would not need to remember to use “6” to return an private call or “9” to return a public/PSTN call.

Tel to IP Routing

This table does not manipulate digits in any way but is used to make routing decisions at the source Norstar VoIP Gateway based on the digits that are dialed when a Gatekeeper is not used. The table can also be used as a fallback when a Gatekeeper is used but has failed.

The table uses the same digit parsing rules as the other tables. Called numbers are checked against this table to determine the IP address of the destination to use in the setup. The digits may be manipulated before they are checked. This is programmed in “Protocol Management / Protocol Definition” by changing the setting for “Tel to IP Routing Mode”. In general, a routing decision will be made before manipulation.

IP to Hunt Group Routing

This table does not manipulate digits in any way but is used to make routing decisions at a destination gateway based on the called number contained in the H.323 setup message. The table uses the same digit parsing rules as other tables. Called numbers are checked against this table to determine which hunt group should be used for the outbound analog connection to Norstar.

The behavior of the hunt group is determined by the setting in “Protocol Management / Protocol Definition / Channel Select Mode”. Options are:

- By phone number: Calls will be directed to specific ports if the called number matches the number programmed for that channel in the Channel – Hunt group table. If more than one channel has the same number, those numbers will be treated like a hunt group and that hunt group will use the “cyclic ascending” distribution logic.
- Cyclic Ascending: Calls will be presented in round robin sequence starting with the lowest available channel number, cycling round and round. The first call will go to channel 1, the second to channel 2 (even if channel 1 is now available).
- Ascending Always: Calls will be presented to the lowest available channel number. For example, the first call will go to channel 1. The second call will go to channel 2 if channel 1 is still busy. If channel 1 is free, the second call will go to channel 1.
- Cyclic Descending: Same as Cyclic Ascending but in reverse.
- Descending Always: Same as Ascending Always but looking for the highest available port.

Entering in Phone numbers in various tables

Phone numbers are entered into various tables on the gateway, such as the Tel- IP routing table. A phone number must be entered without any formatting characters. For example, if you wish to enter the phone number 555-1212, it must be entered as 5551212 without the dash. If the dash is entered, the entry will not work. The dash character is used in number entry only as part of a range definition. For example, the entry [20-29] means “all number beginning at 20 and ending at 29”.

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ITAS TIP - 294 NA
October 2003

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Norstar VoIP Gateway Installation/Configuration Tips

The Norstar VoIP Gateway is an external hardware device that brings IP telephony trunking to Norstar telephone systems. IP telephony trunking allows users to transmit voice calls to other IP trunking enabled telephone systems using a data networking connection. Another example of a IP Telephony enabled system is Nortel's Business Communications Manager (BCM).

General Considerations

When the Norstar VoIP Gateway is deployed into a network already utilizing M1/ITG or IPT, CSE1K, and/or BCM the preferred codec choices and order should always match the existing network device scheme to insure transfer, conferencing, and other feature considerations for full functionality.

If deploying Norstar VoIP Gateway into a network for the first time, consider the following information:

- Configure Codec preferences in accordance with network planning considerations. Refer to Appendix B, Efficient Networking, in the Norstar VoIP Gateway Configuration Guide to assist in determining available network bandwidth and selecting appropriate codec preferences. For best voice, choose G711 ulaw. For lowest bandwidth, choose G723. For a compromise of performance and bandwidth, choose G729
- Jitter buffer settings are determined based on network analysis. For most installations select Auto.

When Norstar is configured for manually answer lines, the gateway attached to the Norstar is responsible for providing ring back tones to the source in order to interoperate with BCM. This configuration also works for gateway to gateway calls so may be used as the standard setup:

- *Protocol Management / Protocol Definition / General / Connection Mode* -> Fast Start. For call progress tones (ring back) to be sent in band, there must be a media path established right after Alert (and before Connect). When using fast start, all information needed to establish a media connection is present. For BCM 3.5, this is sufficient. Prior to BCM 3.5, H.245 protocol exchange must also occur before the BCM will open the media path. For interop with BCM prior to 3.5:
- *Protocol Management / Protocol Definition / Fast Start Parameters / Open H.245 Channel* -> Yes.
- *Protocol Management / Protocol Definition / Fast Start Parameters / Play Ringback Tone to IP* -> Play (for gateways attached to Norstar that uses manual lines).
- *Protocol Management / Protocol Definition / Fast Start Parameters / Play Ringback Tone to Tel* -> Don't Play

When Norstar is configured for target lines, where the Norstar automatically answers the call and the gateway delivers further digits to route the call to the destination set, the gateways must be configured so that ringback tones are not generated by either gateway. The ringback tones will instead come from the destination Norstar after Connect and will indicate the true busy / ringing status of the destination set.

Protocol Management / Protocol Definition / Fast Start Parameters / Play Ringback Tone to IP -> Don't Play (for gateways attached to Norstar that uses target lines).

In this configuration, there can be longer than expected time delays before the caller hears ringback or busy tone. To minimize the delays, it is useful to understand the various steps and program the gateways to optimize delay performance.

- Dialing at originating gateway. Time delay can occur when the originating gateway waits for a timeout period before determining that dialing has concluded. This can be minimized by ending the dialing sequence with the “#” character. In order for the gateway to recognize “#” as a special end of dialing character and not part of the dialed digits, go to the browser section Protocol Management / Protocol Definition / DTMF and Dialing Parameters and set “Use ‘#,’ ‘*’ Digits for Dialing:” to “No”.
- Delay in call processing. The time that it takes for both gateways to exchange the H.323 call processing signaling is very short.
- First ring cycle and CLID. In North America, the ringing signal timing is 2 seconds on followed by 4 seconds off. Following the 2 seconds of ringing signal, the gateway will deliver the CLID information. This takes approximately 1.5 seconds, after which, Norstar answers the line automatically.
- Dial tone detection. Once Norstar provides dial tone, the gateway can either detect the tone (using “D” in the digit delivery table) or wait a set amount of time (using “P” in the digit delivery table). Using the pause parameter “P” adds 1.5 seconds which is faster than the “D” parameter.
- Dialing of digits by the destination gateway. After the pause, the destination gateway dials the digits into the Norstar line. DTMF tone timing is set to 100 msec on followed by 100 msec off for a total of 200 msec per digit. If the destination gateway is attached only to a Norstar, the DTMF tone timing may be shortened to speed up digit dialing. DTMF timing can be set in the ini file. Setting “DTMFDigitLength = 60” will set DTMF duration to 60 msec. Setting “DTMFInterDigitInterval = 60” will set the off time to 60 msec. The combination will be 120msec per digit. This is recommended only if other means are not sufficient.

When do configuration changes get stored to Flash memory?

It can be a bit confusing to determine when particular changes to the gateway configuration become active and when they are committed to Flash memory. It is possible in some instances to make a change active but have the change revert to its old value because it is not yet saved in the Flash memory.

When using Web Browser / Software Update / TFTP Download:

- INI file download is always saved in flash
- CMP download will be saved in flash if the “Save in Flash” parameter is set to “Yes”.

When using Web Browser / Software Update / HTTP Download:

- After the INI file is downloaded, the gateway must be reset to ensure that all parameters become active. When the gateway is reset, the new INI parameters will be stored in Flash.
- If the CMP file download is successful, it is burned into Flash automatically.
- Coefficients and tones file (.dat) are burned to Flash if the download is successful. The gateway must be reset before the changes will take effect.

When using Web Browser (individual changes)

- Whenever the gateway is reset, the new parameters are saved in Flash.

Some parameters do not need a reset in order to become active. If a reset is done, the changes will be made to Flash. If a reset is not done, changes can be preserved in Flash by using “save configuration”. If neither of these are done, the changes will be lost through the next power cycle

Entering Phone numbers in various tables

Phone numbers entered into various tables on the gateway, such as the Tel- IP routing table. A phone number must be entered without any formatting characters. For example, if you wish to enter the phone number 555-1212, it must be entered as 5551212 without the dash. If the dash is entered, the entry will not work.

The dash character is used in number entry only as part of a range definition. For example, the entry [20-29] means "all number beginning at 20 and ending at 29".

BCM programming Tips for Interoperability to Norstar VoIP Gateway

Norstar VoIP Gateway has been interop tested against:

- BCM 3.0.1 Build 7 version 2.
- BCM 3.5 Build 1.1 (Beta) will change when more info becomes available

Configuring H.323 Trunks in BCM

Configuration of H.323 trunks is done in BCM System Administration.

In Services / H.323 Trunks / Local Gateway IP Interface:

Configure Gatekeeper Parameters

If no gatekeeper is used:

- Set Call Signaling to "direct". *Note: This terminology is not consistent with H.323 standards. In H.323 standard terminology, Gatekeeper direct means that the gatekeeper is used for ARQ (Address resolution). This is called "Gatekeeper Resolved" on the BCM.*

If a gatekeeper is used.

- Set Call Signaling to "Gatekeeper Routed" if the gatekeeper will be involved in handling all H.225 messages (for traffic control, billing or similar).
- Set Call Signaling to "Gatekeeper Resolved" if the gatekeeper is used only for address resolution (see note above).
- Set the IP address of the Gatekeeper. This address will be the same as that configured in the VoIP Gateway. Note that BCM currently does not have support for redundant gatekeepers as in the VoIP Gateway.
- Enter the "Alias Names" information. This is used to setup the gatekeeper for the dialing plan that is used by the BCM, defining the digit prefix of the numbers that are supported as well as classifying those digits as to their H.323 numbering plan. This same classification must be used by VoIP Gateways when calling destination numbers served by the BCM. Number classification is done using the "Tel -> IP Destination Number Manipulation Table" on the gateway. Choices for "Alias Names" are as follows:

Tel:<digits>	Uses e.164 coding (dialedDigits)
PUB:<digits>	Uses NPI / TON of Public Unknown
PRI:<digits>	Uses NPI / TON of Private Unknown
UDP:<digits>	Uses NPI / TON of Private Level 1 Regional
CDP:<digits>	Uses NPI / TON of Private Local Number
NAME:<string>	Uses H.323-ID which must be unique

- Time to Live parameter (TTL) should be left at 60 seconds.
- Gateway protocol should be left as "none".
- Note that the BCM does not provide for any programmability of packetization rate when selecting the preferred codecs. For interoperability, the VoIP Gateway must have the same codec choices and must use a packetization rate to match the BCM. The BCM uses packetization for a 30 msec payload. This is the most important consideration for BCM interoperability.

- If silence compression is used on the BCM, it should also be used on the VoIP Gateway. Silence compression is set for the gateway in “*Advanced Configuration / Channel Settings / Silence Compression = Enable*”.

Call Progress Tones

BCM always relies on the destination gateway for generation of the ringback call progress tones. These tones are sent in the media channel over IP from the call destination to the call source.

Configuring Routing on the BCM

In Services / H.323 Trunks / Remote Gateway

This section of BCM is used to add entries for remote gateway routing. Other BCM routing must also be programmed as per normal procedures. BCM should be configured with an entry for each VoIP Gateway as follows:

- Name:** Descriptive name for the gateway
- Destination IP:** IP Address for the VoIP Gateway
- Gateway Type:** In BCM 3.5, choose Norstar VoIP Gateway. In BCM 3.0.1, choose BCM 2.0
- Gateway Protocol:** None
- Destination Digits:** Destination numbers for that particular gateway.

- *Protocol Management / Protocol Definition / General / Connection Mode -> Fast Start.*
- *Protocol Management / Protocol Definition / Fast Start Parameters / Open H.245 Channel -> Yes. T.*

Protocol Management / Protocol Definition / Fast Start Parameters / Play Ringback Tone to IP -> Don't Play (for gateways attached to Norstar that uses target lines).

BCM QoS Monitor and Fallback to Circuit-Switched Network

By enabling the BCM to use PSTN fallback on the Local Gateway IP Interface screens for H.323 and SIP trunks, you allow the system to check the availability of suitable bandwidth for a VoIP call, then switch the call to a land line if the IP line is not available or cannot produce the expected quality. In a BCM network configured for PSTN fallback, there are two connections between a Business Communications Manager and a remote system.

- One connection is a VoIP trunk connection through the IP network.
- The fallback line is a PSTN line, which can be the public lines or a dedicated T1, BRI, PRI or analog line (E&M), to the other system

When a user dials the destination code, the system checks first to see if the connection between the two systems can support an appropriate level of QoS. If it can, the call proceeds as normal over the VoIP trunk. If the minimum acceptable level of QoS is not met, the call is routed over the second route, through the PSTN line.

The Norstar IP gateway does not support the QoS Mean Opinion scores polling there for the BCM can not determine the availability of suitable bandwidth for the fallback to PSTN programming. The BCM will always see the Norstar Gateway as having a Poor mean opinion score as the QoS indicator. These means that Fall back to PSTN configuration on the BCM will not be possible using the QoS Mean Opinion scores.

To interoperate with BCM, either disable Fallback to Circuit-Switched in Services / IP Telephony / H.323 Trunks / Local Gateway IP Interface or Disable QoS in Services / QoS Monitor.

Norstar VoIP Gateway programming Tips for Interoperability with M1 ITG/IPT

Norstar VoIP Gateway has been interop tested against M1 ITG 2.24.26G

Norstar VoIP Gateway has been interop tested against M1 IPT 3.01.12

Configuration of M1 for ITG or IPT is done using Optivity Telephony Manager (OTM) in the ISDN IP Trunk service tab. Once new settings are entered in OTM, they must be applied to the target card by using the synchronize – transmit function. Note that if node properties are changed (IP address for the card), the card must first be disabled before changes can be synchronized. The card does not need to be disabled to update Dialing Plan or Card Properties.

Codec Selection

For proper ITG / IPT interoperability, the following configuration guidelines should be adhered to:

- ITG / IPT payload sizes should be set to 30 ms. Although the gateway is capable of a wider selection of packetization types, setting ITG / IPT payload to 30 msec will ensure compatibility in systems that include BCM.
- Silence suppression should be configured to the same value on both the Gateway and ITG / IPT (i.e. both on or both off). Silence suppression is called Voice Activity Detection on ITG / IPT. Silence compression is set for the gateway in "*Advanced Configuration / Channel Settings / Silence Compression = Enable*".
- The profile on the ITG / IPT must be set to have the same first preferred codec as the VoIP Gateway.

Call Progress Tone Control

- *Protocol Management / Protocol Definition / Fast Start Parameters / Play Ringback Tone to IP* -> Don't Play (for gateways attached to Norstar that uses target lines).
- *Protocol Management / Protocol Definition / Fast Start Parameters / Play Ringback Tone to Tel* -> Don't Play
- *Protocol Management / Protocol Definition / Fast Start Parameters / Progress Indicator to IP* -> 8 or 1. This last parameter is required by M1 in order to instruct that gateway to not generate local ringback tones. This will allow the ringback (or busy) tone from the destination Norstar to be sent in band after Connect. Note that this may cause a delay of 3 to 4 seconds before the caller will hear the ringback tone. Without this setting, the M1 will generate its own local ringback tone which would result in a brief cycle of ringback, followed by a pause, and then either new ringback tone (if the destination is free) or a busy tone (if the destination is busy). Note that BCM does not support Progress Indicator but setting this parameter will not cause issues with BCM.

In all other cases, the M1 will generate local ring back tones for the caller. When not using target lines, the destination gateway should set *Protocol Management / Protocol Definition / Fast Start Parameters / Progress Indicator to IP* -> Not Configured.

Interoperation with M1 and Gatekeeper

During the call setup phase, the initial Setup message sent from the gateway to the M1 ITG or IPT will result in the M1 sending a Facility message to redirect the call to the correct destination address. In most case, this address is exactly the same as the original address used in the initial setup message. Regardless of the number plan configured, M1 sets the destination address NPI/TON in the redirect message to e.164. If a gatekeeper is used, registration information on the gatekeeper will be setup for the particular numbering plan (NPI/TON) used. After the redirect, the gateway will do a new address request (ARQ) with the gatekeeper before sending a new setup message to the M1, as per H.323 protocol. Because the NPI/TON has been changed, this address request will fail.

In order to use M1 IPT or ITG along with a Gatekeeper, the dialing plan for the system should be setup to use only e.164 for NPI/TON.

CSE1K Gatekeeper configuration Tips for interoperability with Norstar VoIP Gateway

Before an endpoint may register with the CSE 1000 gatekeeper it must first be added to the gatekeeper's configuration. Before a registered endpoint may make calls, it must have its numbering plan information assigned within the gatekeeper configuration. All configuration is done using the GK Admin tool accessible through a web browser using a URL of <http://<GatekeeperIP>/gk/>. Note that before any configuration changes become part of the gatekeeper's active configuration, they must be committed to the active database (see Committing Gatekeeper Configuration Changes).

Adding an H.323 Endpoint

In the Gatekeeper Admin tool:

1. Select GK Standby DB Admin
2. Select H323 Endpoints
3. Select Add H323 Endpoint
4. Ensure the following fields are set:

Field	Value	Description
H323AliasName	Text Box	Unique name that identifies this H.323 endpoint.
CDP Domain Name	Dropbox list	CDP domain name used by this endpoint(only applicable if using a CDP dialing plan)
Tandem Endpoint	Dropbox list	Name of another H.323 endpoint to be used as a tandem endpoint.

5. Click Create H323

Setting H.323 Endpoint Dialing Plan

The dialing plan information configured for an H.323 endpoint must be the same as that used by other H.323 endpoints attempting to call that H.323 endpoint. For example if OTTAWA is assigned a private CDP routing code of 493, then another H.323 endpoint must also use a private route, with CDP dialing plan, and the digits 493 as part of the dialed number for the gatekeeper to be able to determine that the destination of the call is OTTAWA.

In the Gatekeeper Admin tool:

1. Select GK Standby DB Admin
2. Select Numbering Plan Entries
3. Select Create
4. Ensure the following fields are set:

Field	Value	Description
Endpoint	Dropbox list	Select the endpoint from the list for which to create a numbering plan entry

5. Click Select
6. Ensure the following fields are set:

Field	Value	Description
Number	Text box	Unique number that identifies this H323 endpoint
Type	Dropbox list	TON/NPI identifier
Entry Cost	Text box	Integer value in the range of 1-255.

7. Click Create

Committing Gatekeeper Configuration Changes

Gatekeeper configuration changes occur in the standby database. For these to be used by the active gatekeeper, they must be committed to the active database, as follows:

In the Gatekeeper Admin tool:

1. Select GK Standby DB Admin
2. Select Database Actions
3. Select Single Step Commit and Crossover

Programming the Gateway for Interop with CSE1K Gatekeeper

The VoIP Gateway should use the following programming for interoperability with the CSE1K Gatekeeper. In the gateway browser, set the following:

1. *Protocol Management / Protocol Definition / Working with Gatekeeper* = Yes
2. *Protocol Management / Protocol Definition / Gatekeeper IP Address* = IP address of the CSE1K Gatekeeper
3. *Protocol Management / Protocol Definition / Gatekeeper Redundancy* = No
4. *Protocol Management / Protocol Definition / Gateway Registration Type* = H.323-ID
5. *Protocol Management / Protocol Definition / H.323-ID* = Same unique H.323 ID as was used in setting up the H.323 Alias Name in the gatekeeper
6. If there is a single gatekeeper being used, set *Protocol Management / Protocol Definition / Register as Terminal* = No. If redundant gatekeepers are in use, set this to "Yes" and enter the IP addresses of the additional gatekeepers.
7. No entries are required in the Registration Prefixes table.
8. *Protocol Management / Protocol Definition / Gatekeeper Timers* should be left at their default values.
9. Optionally, the Tel to IP Routing table may be filled in for all network destinations and *Protocol Management / Protocol Definition / Fallback to Internal Routing* set to "yes". With this setup, if the CSE1K gatekeeper should fail or be unavailable, the gateway will revert to its internal routing tables for call setup. The time that it takes for this fallback to occur is governed by internal timer values and is not immediate.
10. Dialing plan used must match the dialing plan setup for the gatekeeper (structure of digits). The CSE1K gatekeeper does not check the NPI / TON classification of the destination digits in order to resolve the address.

Radvision Gatekeeper configuration Tips for Interoperability with Norstar VoIP Gateway

Norstar VoIP Gateway has been interop tested against Radvision ECS 3.2 gatekeeper.

For general information on using the Radvision ECS 3.2 Gatekeeper, please refer to documentation provided with the application.

General Settings

1. Open the Radvision application.
2. On the **viaIP Administrator screen**, select the **Settings** tab, then click on the **Basics** button.
3. Beside the **Who can register** field, choose **Everyone**.
4. In the left frame, click the **Calls** button..
Ensure the following fields are set:

Field	Value	Description
Accept calls	check box	Box must be checked.
Routing Mode	Direct	Set to Direct . The gatekeeper will then be used only for address resolution. This is the preferred mode of interoperation. Call Setup and Call Setup and Control options are also available and supported.
Check that call is active every	check box	Leave box UNCHECKED . Enabling this feature will result in dropped calls.

5. In the left frame click the **Advanced** button.
Ensure the following fields are set:

Field	Value	Description
Skip Admission Procedure (Pre-Grant ARQ)	Check box	Uncheck this box. Pregranted ARQ is not supported by the gateway.
Use Cisco proxy for unknown zones	Check box	Uncheck this box.
Check that the endpoint is online every ____	check box	Leave box checked. This setting controls the intervals when Radvision checks if the Gateway is still on line.
Enable TTL	check box	Box must be checked. This is the only mechanism currently supported that allows the gatekeeper to determine if the end point is active.
Force Direct for Service Calls	check box	Check this box if you selected the Routing Mode: Direct on the Calls screen.

General Norstar VoIP Gateway Setup for Radvision ECS Gatekeeper Interop

To enable working with the Radvision ECS gatekeeper:

1. *Protocol Management / Protocol Definition / Working with Gatekeeper* = Yes
2. *Protocol Management / Protocol Definition / Gatekeeper IP Address* = IP address of the Radvision ECS Gatekeeper
3. *Protocol Management / Protocol Definition / Gatekeeper Redundancy* = No
4. *Protocol Management / Protocol Definition / Register as Terminal* = No
5. *Protocol Management / Protocol Definition / Gatekeeper Timers* should be left at their default values.
6. *Protocol Management / Protocol Definition / H.323-ID* = Unique H.323-ID name for this gateway (optional)

Setting up the Numbering Plan

The Radvision ECS 3.2 gatekeeper uses the concept of a “service” to setup a supported gateway endpoint’s numbering plan. The service records the number prefix supported by the gateway along with the NPI / TON classification for that prefix. Destination digits in Address Resolution Requests (ARQs) that come to the gatekeeper are examined against the recorded services and if there is a match, an Address Confirmation (ACF) is returned to the calling gateway, allowing the call to be set up.

Services can be created manually within the Gatekeeper and assigned to endpoints. The VoIP Gateway has the ability to automatically setup the necessary services via its gatekeeper registration function.

Registration type will depend on the numbering plan being used in the network. If all numbers are coded using only the e.164 numbering plan, the Registration Type may be set to E.164. An H.323-ID may also be added to the registration. The only value for adding H.323-ID is that it provides a descriptive name for the gateway in the Gatekeeper's endpoints table. If other numbering plans are used, the NPI / TON values must be set in the Registration Prefixes table as follows:

1. *Protocol Management / Protocol Definition / Gateway Registration Type* = "NPI / TON from Table" or "NPI/TON & H.323-ID" if an H.323-ID is also provided. Note that in Beta software, these selections are called "PartyNumber" and "PartyNumber & H.323-ID" respectively.
2. The number prefixes supported by the gateway are entered into *Protocol Management / Registration Prefixes* table. In the prefix column, enter in the leading digits of the supported range of telephone numbers supported by the gateway. Range values within square brackets are also supported. For each entry, define the NPI / TON in the Type of Number columns. This type of number must be the same type of number that a calling gateway will use when calling a number within this range. Destination type of number is programmed in *Protocol Management / Tel -> IP Destination Numbers* manipulation table.
3. Optionally, the *Tel to IP Routing* table may be filled in for all network destinations and *Protocol Management / Protocol Definition / Fallback to Internal Routing* set to "yes". With this setup, if the Radvision ECS gatekeeper should fail or be unavailable, the gateway will revert to its internal routing tables for call setup. The time that it takes for this fallback to occur is governed by internal timer values and is not immediate.

NOTE: This method of registration has been designed specifically to interoperate with the Radvision ECS gatekeeper and uses a part of the H.323 protocol that may not work with other gatekeepers. Interoperability with other gatekeepers has not been tested. When working with another brand of gatekeeper, you should use only the following *Protocol Management / Protocol Definition / Gateway Registration Types*:

1. E.164
2. H.323-ID
3. E.164&H.323-ID

Using Internet Explorer to access Web Browser

Internet explorer's security settings may block access to the gateway web browser if not configured correctly. If this is an issue, a user may see the following message:

Unauthorized

Correct authorization is required for this area. Either your browser does not perform authorization or your authorization has failed. RomPager server.

If this occurs, first delete all cookies from the Temporary Internet files. If this does not clear up the problem, the security settings may need to be altered. In Internet Explorer, Tools, Internet Options select the Security tab, and then select Custom Level. Scroll down until the Logon options are displayed and change the setting to Prompt for user name and Password and then restart the browser. This will fix any issues related to domain use logon policy.

Restoring VoIP Gateway default settings

The VoIP Gateway can be physically reset to restore software default settings, including the default Web Browser username and password and the default network settings for IP address and subnet mask. This feature is very useful if the browser password has been forgotten or you no longer know the IP address and cannot access the unit with the browser.

To reset the VoIP Gateway to software default settings:

1. Disconnect the power and network cable from the VoIP Gateway.
2. Reconnect the power cable to the VoIP Gateway.

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3. After about 45 seconds, the Ready LED on the front panel will go green and the Control LED will blink for about 3 seconds.
4. While the Control LED is blinking, briefly press and release the front panel reset button. The reset button is located through a small access hole on the left side of the front panel. A straightened paper clip should be used to reach the switch that is located inside the unit.
5. The gateway will reset again, restoring the default software parameters.
 - a. IP address will be set to 10.1.10.10
 - b. Subnet Mask will be set to 255.255.0.0
 - c. Username and Password will be set to Admin, Admin
 - d. All other configuration parameters are set to default
6. **These parameter changes are not saved in non-volatile memory!** If the gateway is powered down at this point, it will revert to the values that are stored in non-volatile memory and the process will need to be repeated again!
7. Reconnect the network cable to a computer that is setup with the correct network settings to communicate on the 10.1.10 subnet in the same manner as for a new installation.
8. Open the web browser on the computer and enter http:10.1.10.10.
9. Click *Advanced Configuration*, then click *Network Settings*. Change the settings for the IP address, Subnet mask and Default Gateway Address to the values required then click *Submit*. **Do not reset the gateway until all other programming changes have been made.**
10. Using the web browser, download an ini file to the VoIP Gateway. Ideally, this file will be a saved version from a previous configuration session. If a saved file is not available, download the default ini file contained in the CD-ROM. To download an ini file, from the web browser click *Advanced Configuration* then click *Configuration File* then browse to the file on your computer and click *Send File*. **Do not reset the gateway until all other programming changes have been made.**
11. Using the web browser, make any other programming changes that are needed.
12. Click *Save Configuration* on the main browser screen to save all configuration changes to non-volatile memory.
13. Click *Reset* on the main browser screen to enable all of the configuration changes.

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ITAS TIP - 296 NA UPDATED - December 2003

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Boot Failure on CallPilot 100/150

Boot failure is an issue that has been reported on CallPilot products in the Norstar family. The scope of this issue specifically involves CallPilot 100 and CallPilot 150 in the Norstar product portfolio.

The majority of incidents have been resolved by:

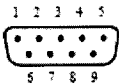
- Re-termination of the CallPilot at the wiring distribution block using the two (2) Four-wire, two-meter line cords provided with the installation kit and RJ11 surface mount or "biscuit" style jacks.
- Replacement of the failed CallPilot Unit.
- Replacement of the failed CallPilot PCMCIA feature cartridge.

Condition

CallPilot 100/150 will not boot sufficiently to run the supported Voicemail or Call Center application. To proceed with the diagnosis the CallPilot 100/150 must be connected via serial cable to a Personal Computer running a terminal emulation package. Pin-outs and configuration parameters are listed below:

CallPilot 100/150 serial port

The following table shows the pin out for the CallPilot 100/150 serial port.

	Pin	Signal	Pin	Signal
	1	No connection	6	No connection
	2	Serial data in (RX)	7	No connection
	3	Serial data out (TX)	8	No connection
	4	No connection	9	No connection
	5	Ground		



Note: The location of the transmit (TX) and receive (RX) pins on your terminal can vary. Refer to your terminal or computer documentation to confirm pin locations.

Configuring the terminal

The terminal or terminal emulation program you use must be VT100 compatible and must support the ASCII Character set. If the terminal does not support the ASCII Character set, the text displays incorrectly.

You must configure your terminal to the following communications parameters:

- 9600 bits per second
- 8 data bits
- no parity
- 1 stop bit
- no flow control

For information about how to set these parameters, refer to the documentation for your terminal or terminal emulation program.

Problem recognition

When an end user reports CallPilot boot failure, it is critical that the field technician obtain accurate information about the scenario and report the failure to their next level of support

To assist Nortel in the diagnostic process examples of boot failure messages follow in this tip to help the technician in identifying the root cause of the failure in the field. **Key boot messages regarding failures are highlighted to facilitate fault analysis by comparison.**

Scenario #1 Boot Messages – Poor or Marginal Connectivity between KSU and CallPilot 100/150

CallPilot 150 Boot Loader V1.5.19
(C) 2001 Nortel Networks

NETWORK INTERFACE PARAMETERS:

IP address on LAN is 192.168.110.10
LAN interface's subnet mask is 0xfffff00

HARDWARE PARAMETERS:

Serial channels will use a baud rate of 9600
This board's ethernet address is 0:60:38:BF:0:AA

CALLPILOT BOOTLOADER PARAMETERS:

Execution Mode: Load CallPilot

Source File System Parameters:

Device: ATA Disk
Source File List Name: filelst.lst

Destination File System Parameters:

Device: ATA Disk
File List Name: filelst.lst
Format Target Device: Y
Boot File Name: CallPilot.bin
After board is reset, start -up code will wait 2 seconds

To change any of this, press any key within 2 seconds

Automatic Update Mode Enabled!

To Change Update Mode to Manual, press any key within 10 seconds

Updating in Automatic Mode!

Initializing ATA Disk... Done.

Initializing PCMCIA Stack ...SSInit: CS_Sockets - 2, Num_PWindows - 8

Card services Init complete found 2 sockets.

Done.

Initializing PCMCIA ATA Disk Drives ...SanDisk SDP 5/3 0.6

Atalnit: completed

Done.

Detecting ATA Cards...

Device found in Slot A:

Model: SanDisk SDCFB-256

Serial: 101904J080213219

Rev.: Vdg 1.23

Mounted 10.256

Loading 10.256/CallPilot.bin... Done.

Unmounting 10.256

Transferring control to the downloaded code

I-Cache ON, D-Cache ON

Downloaded OS and application executing from RAM

Memory Test Completed Successfully

Starting root(RAM)

Initializing D-channel driver

Initialized for 8 channels

Disk volume 3.0.0, initialized...

```

Initializing ATA Disk... Done.
Initializing PCMCIA Stack ...SSInit: CS_Sockets - 2,Num_PWindows - 8
Card services Init complete found 2 sockets.
Done.
Initializing PCMCIA ATA Disk Drives ...SanDisk SDP 5/3 0.6
AtaInit: completed
Done.
Detecting ATA Cards... Card(s) detected
Verifying 7.0
PPP: Using hardcoded ip address 192.168.0.2
PPP: Username is CallPilot
PPP: Password is administrator
PPP: Adding PPP NL...

Standard output device initialized...
7.1\safe not found
Pseudo device initialized...
TFTP device initialized...

Login:

Type "test" to stop auto boot

Starting Access/2 and Voicemail
SysConfig file does not exist. Use default!!!
Opening DSP Msg logfile
DSP[0]: 1.50.37.A3 Aug 23, 2002
DSP[1]: 1.50.37.A3 Aug 23, 2002
DSP Abstraction Layer Binding to port 5001
DSP Abstraction Layer Accepting...
  Language Debug: Reading '7.1\access2\runtime\alarm0.dat'.
  Read language file '7.1\access2\runtime\alarm0.dat'.
  Loaded 1 of 1 language file(s). Default language: 0 (hex).
Curr File Pool Path=7.0\access2\FILEPOOL\0\*.**
Curr File Pool Path=7.1\access2\FILEPOOL\0\*.**
OSA DBG: pSOS_ERR: ResumeTask - t_resume rc =15
TCM 1: Channel 0: DOWN
TCM 2: Channel 2: DOWN
TCM 3: Channel 4: DOWN
TCM 4: Channel 6: DOWN
DCHCNTRL - DCH0 Reader created
DCHCNTRL - DCH1 Reader created
DCHCNTRL - DCH2 Reader created
DCHCNTRL - DCH3 Reader created
DCHCNTRL - Number of D-channels trying :4
DCHCNTRL - ALERT: All TCMs are Out of Sync. Reset hardware if a new KSU is connected
DCHCNTRL - ALERT: System will restart after 120 seconds
DCHCNTRL - ALERT: To stop rebooting, enter stopreboot
Access logging disabled
SYS: Access failed to start, system will restart after 120 seconds
SYS: To stop rebooting, enter stopreboot
I-Cache ON, D-Cache ON
Downloaded OS and application executing from RAM
Memory Test Completed Successfully
Starting root(RAM)
Initializing D-channel driver
Initialized for 8 channels
Disk volume 3.0.0, initialized...
Initializing ATA Disk... Done.
Initializing PCMCIA Stack ...SSInit: CS_Sockets - 2,Num_PWindows - 8
Card services Init complete found 2 sockets.
Done.
Initializing PCMCIA ATA Disk Drives ...SunDisk SDP 5/3 0.6
AtaInit: completed
Done.
Detecting ATA Cards... Card(s) detected
Verifying 7.0
PPP: Using hardcoded ip address 192.168.0.2
PPP: Username is CallPilot

```

```

PPP: Password is administrator
PPP: Adding PPP NI...

Standard output device initialized...
7.1\safe not found
Pseudo device initialized..
TFTP device initialized...

Login:

Type "test" to stop auto boot

Password:

Login: Starting Access/2 and Voicemail
Opening DSP Msg logfile
DSP[0]: 1.50.21.0 Feb 01, 2002
DSP[1]: 1.50.21.0 Feb 01, 2002
DSP Abstraction Layer Binding to port 5001
DSP Abstraction Layer Accepting...
  Language Debug: Reading '7.1\access2\runtime\alarm0.dat'.
  Read language file '7.1\access2\runtime\alarm0.dat'.
  Loaded 1 of 1 language file(s). Default language: 0 (hex).
Curr File Pool Path='7.0\access2\FILEPOOL0\*.*/'
Curr File Pool Path='7.1\access2\FILEPOOL0\*.*/'
OSA DBG: pSOS_ERR: ResumeTask - t_resume rc =15
TCM 1: Channel 0: DOWN
TCM 2: Channel 2: DOWN
TCM 3: Channel 4: DOWN
TCM 4: Channel 6: DOWN
DCHCNTRL - DCH0 Reader created
DCHCNTRL - DCH1 Reader created
DCHCNTRL - DCH2 Reader created
DCHCNTRL - DCH3 Reader created
DCHCNTRL - Number of D-channels trying :4
DCHCNTRL - ALERT: All TCMs are Out of Sync. Reset hardware if a new KSU is connected.
DCHCNTRL - ALERT: System will restart after 120 seconds
DCHCNTRL - ALERT: To stop rebooting, enter stopreboot

```

Resolution Method – Poor or Marginal Connectivity between KSU and CallPilot 100/150

Re-termination of the CallPilot at the wiring distribution block using the two (2) Four-wire, two-meter line cords provided with the installation kit and RJ-11 surface mount or "biscuit" style jacks. This failure has also been reported on sites utilizing wiring distribution blocks with integrated RJ-11 jacks on the wiring block wafer. Increased stability has been observed when these connections are moved to a cross-connected RJ-11 surface mount or biscuit jack located between the main wiring distribution panel and the CallPilot 100/150 unit.

Scenario #2 Boot Messages – Sekur file corruption

CallPilot 150 BootLoader V1.5.19
(C) 2001 Nortel Networks

NETWORK INTERFACE PARAMETERS:

IP address on LAN is 192.168.110.10
LAN interface's subnet mask is 0xfffff00

HARDWARE PARAMETERS:

Serial channels will use a baud rate of 9600
This board's ethernet address is 0:60:38:BF:0:AA

CALLPILOT BOOTLOADER PARAMETERS:

Execution Mode: Load CallPilot

Source File System Parameters:

Device: ATA Disk

Source File List Name: filelst.lst

Destination File System Parameters:

Device: ATA Disk

File List Name: filelst.lst

Format Target Device: Y

Boot File Name: CallPilot.bin

After board is reset, start -up code will wait 2 seconds

To change any of this, press any key within 2 seconds

Automatic Update Mode Enabled!

To Change Update Mode to Manual, press any key within 10 seconds

Updating in Automatic Mode!

Initializing ATA Disk... Done.

Initializing PCMCIA Stack ...SSInit: CS_Sockets - 2,Num_PWindows - 8

Card services Init complete found 2 sockets.

Done.

Initializing PCMCIA ATA Disk Drives ...SanDisk SDP 5/3 0.6

AtaInit: completed

Done.

Detecting ATA Cards...

Device found in Slot A:

Model: SanDisk SDCFB-256

Serial: 101904J0802I3219

Rev.: Vdg 1.23

Mounted 10.256

Loading 10.256/CallPilot.bin... Done.

Unmounting 10.256

Transferring control to the downloaded code

I-Cache ON, D-Cache ON

Downloaded OS and application executing from RAM

Memory Test Completed Successfully

Starting root(RAM)

Initializing D-channel driver

Initialized for 8 channels

Disk volume 3.0.0, initialized...

Initializing ATA Disk... Done.

Initializing PCMCIA Stack ...SSInit: CS_Sockets - 2,Num_PWindows - 8

Card services Init complete found 2 sockets.

Done.

Initializing PCMCIA ATA Disk Drives ...SanDisk SDP 5/3 0.6

AtaInit: completed

Done.

Detecting ATA Cards... Card(s) detected

Verifying 7.0

Unable to calculate work area size, stat_vfs, rc=0x2023

PPP: Using hardcoded ip address 192.168.0.2

PPP: Username is CallPilot


```

ACCESS ERROR, writeserialtosekur: cannot create file 7.0\access2\SEKUR!!!!
ACCESS ERROR, writeserialtosekur: cannot create file 7.0\access2\SEKUR!!!!
ACCESS ERROR, writeserialtosekur: cannot create file 7.0\access2\SEKUR!!!!
ACCESS ERROR, writeserialtosekur: cannot create file 7.0\access2\SEKUR!!!!
Language Debug: Reading '7.1\access2\runtime\alarm0.dat'.
OSA DBG: pSOS_ERR: ResumeTask - t_resume rc = 15
Read language file '7.1\access2\runtime\alarm0.dat'.
Loaded 1 of 1 language file(s). Default language: 0 (hex).
OSA DBG: osFile: close_f error = 201a

```

```

ACCESS ERROR, writeserialtosekur: cannot create file 7.0\access2\SEKUR!!!!
TCM 1: Channel 0: UP
CH0 is opened.

```

```

TCM 2: Channel 2: UP
CH2 is opened.
TCM 3: Channel 4: UP
CH4 is opened.
TCM 4: Channel 6: UP
CH6 is opened.
DCHCNTRL - DCH0 Reader created
DCHCNTRL - DCH1 Reader created
DCHCNTRL - DCH2 Reader created
DCHCNTRL - DCH3 Reader created
DCHCNTRL - Number of D-channels trying :4
4:parser sync'ed up
0:parser sync'ed up
2:parser sync'ed up
6:parser sync'ed up
dchMon: Initialized FumpSTM of Dchannel No : 3
dchMon: Initialized FumpSTM of Dchannel No : 1
dchMon: Initialized FumpSTM of Dchannel No : 2
dchMon: Initialized FumpSTM of Dchannel No : 4
DCHCNTRL - Active channel = 4 D Channel State = 255

```

```
dch: channel 4 Msg Len 99 Update Board to Access
```

```
dch: channel 4 Msg Len 99 Update Board to Access
```

```
dch: channel 4 Msg Len 99 Update Board to Access
```

```
dch: channel 4 Msg Len 99 Update Board to Access
```

```

D-channel No. 1 is working
D-channel No. 3 is working
D-channel No. 2 is working
D-channel No. 4 is working
0:receive unknown msg c0
2:receive unknown msg 2
6:receive unknown msg c0
0:parser sync'ed up
2:parser out of sync
6:parser out of sync
2:parser sync'ed up
6:parser sync'ed up
Got KSU Version from functerm: ---30BWG00Ev
***>>>TelInit telNumITInfoElemBytes 4

```

```

*****
Loaded 1 of 1 language file(s). Default language: 0 (hex).

```

```

* ! R E A D Y ! *
* - *
*****

```

```

Access logging disabled
Access up in 70 seconds
Starting voicemail
Country: NORTH AMERICA

```

Recovery Method – Sekur file corruption

Replacement of the affected PCMCIA cartridge and restoration of the database from the most current site backup, if available. Procedures for database restoration from a previously performed backup are detailed in the CallPilot Mini/CallPilot 150 Installation and Maintenance Guide, Chapter 8, Backing up and restoring CallPilot.

NOTE: Restoration of a backup database to a new CallPilot 100/150 unit can result in data loss and will require ITAS intervention to recover all mailboxes, greetings, and messages correctly. PCMCIA cartridge replacement to the existing CallPilot 100/150 platform will insure proper database restoration.

Resolution and Preventative Measures – Sekur file corruption

Replacement of the affected PCMCIA cartridge and restoration of the database from the most current site backup will recover the failure. As a preventative measure CallPilot 2.00.51 can be downloaded from www.nortelnetworks.com to upgrade the affected unit. CallPilot 100/150 Version 2.00.47 or higher contains additional recovery modules and mechanisms for the outlined issue (PCMCIA corruption).

The recovery mechanism employed in CallPilot 2.00.47 or greater calculates if an uncorrectable error is detected, or a preset threshold of 50 errors is exceeded. When this condition is detected the 7.0 volume of PCMCIA card is formatted, thus overwriting the corruption. In order to bring CallPilot back to full service a restore of configuration data must be performed.

A log entry to STLOG.OUT (right after "CallPilot Booted" entry) is provided to indicate modifications to file system or volume formatting through this process.

The CallPilot database must be backed up again after the upgrade to 2.00.47 or greater for recovery purposes. Based on the frequency of changes to the Mailbox or Call Center structure within the CallPilot regularly scheduled backups are recommended as well.

Scenario #3 Boot Messages – Illegal extent, OS scratchpad corruption

CallPilot 150 Boot Loader V1.5.19
(C) 2001 Nortel Networks

NETWORK INTERFACE PARAMETERS:

IP address on LAN is 192.168.110.10
LAN interface's subnet mask is 0xfffff00

HARDWARE PARAMETERS:

Serial channels will use a baud rate of 9600
This board's ethernet address is 0:60:38:BF:0:AA

CALLPILOT BOOTLOADER PARAMETERS:

Execution Mode: Load CallPilot

Source File System Parameters:

Device: ATA Disk
Source File List Name: filelst.lst

Destination File System Parameters:

Device: ATA Disk
File List Name: filelst.lst
Format Target Device: Y
Boot File Name: CallPilot.bin

After board is reset, start -up code will wait 2 seconds

To change any of this, press any key within 2 seconds

Automatic Update Mode Enabled!

To Change Update Mode to Manual, press any key within 10 seconds

Updating in Automatic Mode!

Initializing ATA Disk... Done.

Initializing PCMCIA Stack ...SSInit: CS_Sockets - 2,Num_PWindows - 8

Card services Init complete found 2 sockets.

Done.

Initializing PCMCIA ATA Disk Drives ...SanDisk SDP 5/3 0.6

Atalnit: completed

Done.

Detecting ATA Cards...

Device found in Slot A:

Model: SanDisk SDPCFB-256

Serial: 103513J0802N2926

Rev.: Vdg 1.23

Mounted 10.256

Loading 10.256/CallPilot.bin... Done.

Unmounting 10.256

Transferring control to the downloaded code

I-Cache ON, D-Cache ON

Downloaded OS and application executing from RAM

Memory Test Completed Successfully

Starting root(RAM)

Initializing D-channel driver

Initialized for 8 channels

Disk volume 3.0.0, initialized...

Initializing ATA Disk... Done.

Initializing PCMCIA Stack ...SSInit: CS_Sockets - 2,Num_PWindows - 8

Card services Init complete found 2 sockets.

Done.

Initializing PCMCIA ATA Disk Drives ...SanDisk SDP 5/3 0.6

Atalnit: completed

Done.

Detecting ATA Cards... Card(s) detected

Verifying 7.0

VF FDFRE:FD in use marked free,fn1=242,path1=/access2/CABINETS/CAB00002.CAB/f983wui.log

VF FDFRE:FD in use marked free,fn1=45,path1=/access2/CABINETS/CAB00003.CAB

VF FDFRE:FD in use marked free,fn1=70,path1=/access2/CABINETS/CAB00004.CAB

[illegible]

<http://www.nortelnetworks.com/itas>

[illegible]

Recovery Method – Illegal extent, OS scratchpad corruption

Replacement of the affected PCMCIA cartridge and restoration of the database from the most current site backup, if available. Procedures for database restoration from a previously performed backup are detailed in the CallPilot Mini/CallPilot 150 Installation and Maintenance Guide, Chapter 8, Backing up and restoring CallPilot.

NOTE: Restoration of a backup database to a new CallPilot 100/150 unit can result in data loss and will require ITAS intervention to recover all mailboxes, greetings, and messages correctly. PCMCIA cartridge replacement to the existing CallPilot 100/150 platform will insure proper database restoration.

Resolution and Preventative Measures – Illegal extent, OS scratchpad corruption

Replacement of the affected PCMCIA cartridge and restoration of the database from the most current site backup will recover the failure. As a preventative measure CallPilot 2.00.51 can be downloaded from www.nortelnetworks.com to upgrade the affected unit. CallPilot 100/150 Version 2.00.47 or higher contains additional recovery modules and mechanisms for the outlined issue (PCMCIA corruption).

The recovery mechanism employed in CallPilot 2.00.47 or greater calculates if an uncorrectable error is detected, or a preset threshold of 50 errors is exceeded. When this condition is detected the 7.0 volume of PCMCIA card is formatted, thus overwriting the corruption. In order to bring CallPilot back to full service a restore of configuration data must be performed.

A log entry to STLOG.OUT (right after "CallPilot Booted" entry) is provided to indicate modifications to file system or volume formatting through this process.

The CallPilot database must be backed up again after the upgrade to 2.00.47 or greater for recovery purposes. Based on the frequency of changes to the Mailbox or Call Center structure within the CallPilot regularly scheduled backups are recommended as well.

Technical Support

USA and Canada

Authorized distributors-Nortel Networks Global Network Technical Support (GNTS)

Telephone:

1-800-4Nortel (1-800-466-7835)



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JC 12/12/03

ITAS TIP - 289 NA
Updated May 2003

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Diagnosing Delayed Voice Messages on Norstar Voicemail

Delayed Messages is an issue that has been reported over the years on a small number of the voicemail products in the Norstar family. This includes StarTalk, StarTalk Mini, FlashTalk and NVM.

The vast majority of incidents have been resolved by:

- rebooting the voicemail unit
- deleting and recreating the mailbox
- deleting and recreating a new mailbox
- deleting all mailboxes and reprogramming the voicemail

If the methods above do not resolve the issue then NVM on the NAM is the only platform that presents us an opportunity for diagnosing delayed messages. The last recourse for the other products is to replace the unit.

Condition

On the NAM it has been reported on NVM1.0 to NVM4.0. But to proceed with the diagnosis the NAM must be at a software application level of NVM 4.004E/Access 5.01.00F or newer.

Typically, the delayed messages issue occurs on a few mailboxes (never system wide) and affects a small percentage (1 or 2 messages per week) of the messages. Delayed messages are a problem for several months and then it disappears. The delay time ranges from a couple of hours to several days.

Problem recognition

When an end user reports they are experiencing delayed messages, it is critical that the field technician obtain accurate information about the scenario. This has proved to be a difficult exercise and has been the main reason for the lack of resolution.

To assist Nortel in the diagnosis a questionnaire is attached to this tip for the customer to capture the information.

Resolution

To begin with Norstar Tech Support must be contacted so that Delayed Message Debugging can be enabled.

When the mailbox owner discovers the delayed message they must do a Feature 9*9 on a set to zip up the NAM logs.

The logs and the information from the questionnaire would then be forwarded to Nortel.

Technical Support

USA and Canada

Authorized distributors- Nortel Networks Global Network Technical Support (GNTS)

Telephone:

1-800-4Nortel (1-800-466-7835)

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Delayed Messaging Questionnaire

In order to diagnose the problem of delayed messages it is necessary to obtain information about the scenario. The answers to the following questions will assist Nortel in the analysis.

1. Is the delayed message saved in the mail? If no, further analysis is not possible
If yes, what is the mailbox _____
2. What is the envelope information about this message? _____
3. What time did the caller leave the message? _____
4. Was the message from an internal or external caller? _____
5. What time did the mailbox owner find the message? _____
6. Was this message received with other messages? _____ How many? _____
7. What was the time(s) that the mailbox was accessed between when the message was left and when it was discovered?

8. Describe the circumstances that caused the delayed message to be discovered. Did 'message for you' prompt appear?

9. Is it possible the delayed message arrived at the proper time but the 'message for you' prompt did not appear on the set and later another message was received that did turn on the 'message for you' prompt and the user went into the mailbox and discovered the delayed message?

10. Was Feature 9*9 invoked on the set when the delayed message was discovered? _____

ITAS TIP – 290 NA
April 2003

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MICS Upgrades from pre-4.0 to MICS 6.0

MICS 6.0 was released to the field in November 2003 and offers enriched networking capabilities. Some of these enhancements include the ability to add a third Digital Trunk Interface (DTI), Distinctive Line Ringing (DLR), System Wide Call Access (SWCA) and the ability to utilize NVM for Centralized voicemail and Auto Attendant.

Condition

In the Documentation for MICS 6.0 there is a section under upgrading your MICS software called "Upgrade from Pre-4.0 (retain programming)" this section contains a number of errors. The following is the correction to this section of documentation. Please use these steps when upgrading from software older then MICS 4.0.

Problem recognition

MICS (all versions) 1.0-3.0

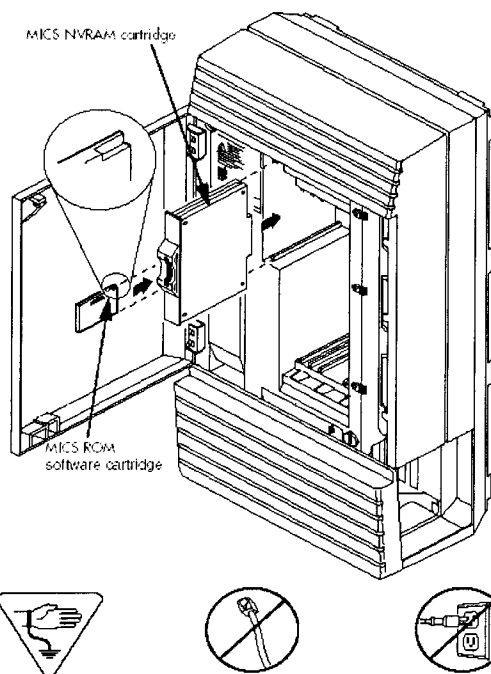
If you upgrade to MICS 6.0 from software versions prior to MICS 4.0, to retain programming integrity use the MICS upgrade tool for the appropriate system. **Note:** The line numbering for your system will change with this upgrade.

Upgrade from pre-4.0 to 6.0 (retain programming)

If you want to perform a two-step upgrade from a pre-4.0 system, so you can retain your system information, you need to use the upgrade tool that was introduced with MICS 4.0. The upgrade tool allows you to transfer your NVRAM information to the new style NVRAM cartridge that contains a MICS CS ROM cartridge. If you do not use the upgrade tool, all your programming will be lost.

To use the Upgrade Tool to upgrade from previous versions of MICS (all versions prior to MICS 4.0), follow these steps:

1. Power down the KSU
2. Disconnect all amphenol cables.
3. Remove the power to the ICS and all associated modules. Disconnecting the power ensures protection for electronic components and that the data stored in the feature cartridge will not be corrupted.
4. Remove your old Norstar MICS software cartridge.
5. This step determines the type of MICS system you will ultimately upgrade to. Insert the MICS NVRAM cartridge. See illustration 1 and Part Number table1. Insert the appropriate MICS upgrade tool ROM (NA-MICS, CDA-MICS-XC or USA-MICS-XC).



Part numbers for Upgrade tool.

Upgrade Tool	Order Numbers
USA-MICS-XC	NTAB2567
CDA-MICS-XC	NTAB2568
NA-MICS	NTAB2569

6. Reconnect all amphenol cables.
7. Power up. Wait until display flashing stops. The Alarm set on the system should then display "Insert MICS Card".
8. Power down the KSU.
9. Remove the NVM RAM Upgrade tool.
10. Insert the Modular ICS MICS 6.0 ROM software cartridge to perform the final stage of the upgrade to MICS 6.0. Verify that you are using the proper software cartridge.
11. Power up. If no alarm-event messages are observed, the upgrade to the new MICS software has been performed. If alarm or event codes are displayed, refer to *Alarm and event codes* in the documentation.

Notes

All old programming is maintained when upgrading from the 0X32 Release 1 - T1 software (using the upgrade tool version 25.07 or higher), with the following exceptions:

- all system passwords are returned to the system defaults
- ATA ans timer setting is returned to the system default setting

There will be line renumbering on systems upgraded from software versions previous to 6.0.

Ensure that you maintain an accurate record of your existing system programming so that you can plan your new system programming appropriately. If you have a Norstar system with a Modular 8X24 Key Service Unit (KSU), you cannot upgrade your software with the Upgrade Tool. If you

want to upgrade to MICS 6.0, you must replace your older Modular 8X24 KSU with the current 0X32 ICS, and then program the system.

Note: The Key Service Unit (KSU) has been renamed the Integrated Communication System (ICS). If you have a Norstar system with a Modular 0X32 ICS, you can use your ICS with the new MICS 6.0 and MICS-XC 6.0 software.

When upgrading from MICS 1.1, note that the Call log space has increased in newer versions. Reallocate log space after upgrading.

When upgrading, Call Log information may be lost.

During a system restart, Call Log information is not saved. Make sure to notify users if a system restart is planned so any log information can be recorded first.

A loss of UTAM information occurs when upgrading US MICS-XC systems.

UTAM Recovery Codes are required. If you are upgrading the system to include Companion components, see the upgrade instructions included in the Modular ICS Companion Installer Guide.

Technical Support

USA and Canada

Authorized distributors-Nortel Networks Global Network Technical Support (GNTS)

Telephone:

1-800-4Nortel (1-800-466-7835)



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ITAS TIP - 284 NA
February, 2003

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Norstar CallPilot (rel. 1.5) Features

Feature	CallPilot 100	CallPilot 150	CallPilot 150 (rel. 1.0)
		(see note 1)	
	current release	current release	discontinued release
Market Release	October 2002	July 2002	Nov. 2001 to July 2002
Voice channels	4	8	8
Voice storage (hours)	9	60	26(standard), 60(expanded)
Maximum number of mailboxes	300	300	300
Initial number of subscriber mailboxes	10	32*	20
Maximum number of subscriber mailboxes	40	200	100
Maximum number of special mailboxes	300 - subscriber**	300 - subscriber**	300 - subscriber**
Basic voicemail	included	included	included
Outbound transfer	included	included	included
Call recording, call interrupt	included	included	included
AA & CCR	included	included	included
Fax switch on AA lines	included	included	included
Networking (VPIM & AMIS)	not available	optional**	optional
Desktop messaging	not available	optional***	not available
Basic Call Center	optional	included****	optional
Call Center Reporting	optional	optional	optional
Maximum skillsets	2	2	2
Maximum active agents	10	10	10
* comes with 20 mailboxes plus authorization codes for 4 & 8 mailboxes			
** special mailboxes (info or network) available is equal to 300 minus the number of created subscriber mailboxes			
*** comes with authorization code for 2 free seats, maximum 100 seats			
**** comes with authorization code to enable			
Notes:			
1. The two versions (standard & expanded) of CP150 are dropped in favour of one version as of October 2002			
2. CP100 has depopulated CP150 hardware			
3. Compatibility with MICS/CICS 4.1 & newer and 3x8 DR5.1 (this is the only DR5 KSU that is compatible)			

Technical Support

USA and Canada

Authorized distributors- Nortel Networks Global Network Technical Support (GNTS)

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□

Norstar Voicemail 4.1 Software Available on Floppy

New Feature 983 functionality has been introduced on NVM 4.1 on the NAM.

Condition

To make changes to COS (Class of Service) and Redirect DN it has been necessary to use NVM Manager. This required a computer to be connected to the NAM to make these changes.

Problem recognition

There are several methods of connecting a PC to the NAM. These methods are through the serial port, network card and the modem. The most common method is the direct-connect to the serial port. Unfortunately, there are issues in establishing a direct-connect on client PCs running Windows NT, 2000 and XP. To address this issue NVM 4.1 has enabled COS and Redirect DN changes to be made from Feature 983 on a set.

Resolution

On the Nortelnetworks/support website under Norstar: Messaging – Voice Mail – Software tab look for:
NVM Norstar Voice Mail Software 4.1.05 Upgrade

This executable can be downloaded and run on a PC to create a NAM bootable floppy disk.

This floppy can be inserted into any NAM running NVM 4 (4.004A, 4.004C and 4.004E). Booting the NAM will cause the NVM4.1.05 software to be loaded.

NOTE:

- If at a later date, a Voicemail CD ROM containing an earlier version (4.004A, 4.004C & 4.004E) of the Voicemail application is applied to the NAM then the 4.1.05 version will be overwritten. It would be necessary to run the 4.1.05 floppy upgrade again.
- Adding this floppy version of 4.1.05 does not change the compatibility with KSUs because there is no Access (F915) application change.
For example: To be compatible with MICS 6 it is necessary to upgrade the NAM with the VM4.1 CD ROM because it also upgrades the Access application to version 6
- This floppy version of NVM 4.1.05 is not meant to replace the VM4.1 CD ROM upgrade, but is designed for sites where a quick upgrade is desired to get the new F983 capability. This floppy upgrade will take the NAM out of service for a maximum of 10 minutes.
- The CD ROM upgrade is the complete version for the NAM because it contains fixes/features for both the Access and the Voicemail applications.

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September 10, 2002
TIP 20020909-1



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Norstar CICS KSU Resetting

Condition (Applies to units manufactured between June 3 to August 14, 2002)

On initial installation - the CICS KSU powers up normally (i.e. time & date appear on set), but then goes into an unrecoverable reset mode within the first hour. The system then remains in this mode and is non-operational. However, if the identified time period elapses and the KSU does not reset, the condition will not manifest itself and replacement will not be required.

* Please note that based on Nortel's internal assessment, less than 10% of all KSUs manufactured during the timeframe identified above will experience this condition.

Root Cause

The condition was diagnosed to be defective DRAM component located on the main printed circuit pack.

Solution

All defective DRAM components provided by our supplier have been quarantined and new shipments of raw material have been received for mass production.

New Product

As of August 15, 2002 - all CICS KSU production units incorporate the non-defective DRAM component.

Installed Base

Nortel Networks will be detailing and modifying (at no expense to the customer including Freight charges) all units returned to Order Management that has a manufacturing date of June 3 – August 14, 2002 (inclusive). This information can be found on the product label located on the outside of the cardboard carton. The affected CPCs are as follows:

<u>Engineering Code</u>	<u>Ordering Code</u>	<u>Description</u>
□ □ NT7B58AAAN	(A0869691)	110V CICS KSU
□ □ NTBU0528	(A0870184)	CICS WITH EQUIPMENT LS/DS TRUNK CARD
□ □ NTBU0529	(A0870185)	CICS WITH EQUIPMENT CLID TRUNK CARD
□ □ NTBU0530	(A0870188)	CICS WITH EQUIPMENT 2 PORT BRI U TRUNK CARD
□ □ NTBU0531	(A0870189)	CICS WITH EQUIPMENT 4 PORT BRI U TRUNK CARD
□ □ NTBU0533	(A0870192)	CICS WITH EQUIPMENT GLOBAL LS/DS
□ □ NTBU0545	(A0871629)	CICS 4.2W CLID STD SW IRAD PROMPTS FLASH LIGHT CA
□ □ NTBU0546	(A0871631)	CICS 4.2W CLID STD SW IRAD PROMPTS FLASH 2 PORT CA
□ □ NTBU0547	(A0871632)	CICS 4.2W CLID STD SW IRAD PROMPTS FLASH 4 PORT CA
□ □ NTBU0548	(A0871633)	CICS 4.2W CLID STD SW IRAD PROMPTS FLASH LIGHT CA
□ □ NTBU0549	(A0871634)	CICS 4.2W CLID STD SW IRAD PROMPTS FLASH 2 PORT CA
□ □ NTBU0550	(A0871635)	CICS 4.2W CLID STD SW IRAD PROMPTS FLASH 4 PORT CA
□ □ NTBU0551	(A0871636)	CICS 4.2W CLID STD SW IRAD PROMPTS FLASH LIGHT US
□ □ NTBU0552	(A0871637)	CICS 4.2W CLID STD SW IRAD PROMPTS FLASH 2 PORT US
□ □ NTBU0553	(A0871639)	CICS 4.2W CLID STD SW IRAD PROMPTS FLASH 4 PORT US
□ □ NTBU0593	(A0882575)	CICS 4.2 S/W M7310

This process will be in place until October 31, 2002.

Replacement Process

This program will be administered through Order Management. Customers choosing to use this retrofit must call one of the Order Management Centers listed below:

Nashville - Please contact your normal Order Management Prime

Sunrise - 1-866-839-8251

Canada - 1-800-668-1717

Advance Replacement Procedure:

Contact the Order Management Center to request an Advance Replacement Number (RMA#) per above or FAX the required information to your regular Order Management number in Nashville, 1-866-314-6246 in Sunrise or 1-800-668-1718 in Canada. When requesting an RMA number, please have the following information available:

Original Purchase Order Number
Quantity
Announcement number:
Ordering code:
Item description: CICS KSU/Bundle*
Ship to address:
Distributor's bill-to address:
Contact name and phone number:

* Please note that both CICS KSUs and bundles will be accepted as part of this advance replacement procedure. However, the regular advance replacement time interval may be slightly greater than normal due to the large number of bundles expected to be returned and detailed. Thus, it is Nortel's preference to have only the CICS KSUs returned in order to better facilitate & expedite the replacement.

Upon arrival of the advance replacement equipment at the requested site, immediately return the defective equipment to the following address:

U.S. Distributors
Nortel Networks
M1 & Norstar Returns
640 Massman Drive
Nashville, TN 37210
Attn: RMA#_____
Norstar CICS Replacement Program

Canadian Distributors
Nortel Networks
6335 Edwards Blvd.
Mississauga, ON
Canada L5T 2W7
Attn: RMA#_____
Norstar CICS Replacement Program

All shipments must include a packing slip from distributors with the following information:

Distributor's address:
RMA number:
Quantity being returned:

Ordering code of items being returned:
PO number:

Important Notes:

The RMA number must appear on the outside of all equipment that is being returned along with the words "Norstar CICS Replacement Program." If any advance-replaced equipment is not returned within 30 days to Nortel Networks, the distributor is invoiced for the advance replacement at a non-return billing price. The non-return billing price is determined by Nortel Networks Global Repair Services and is subject to change depending on equipment availability.

For more information please contact your Nortel Sales Manager.



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