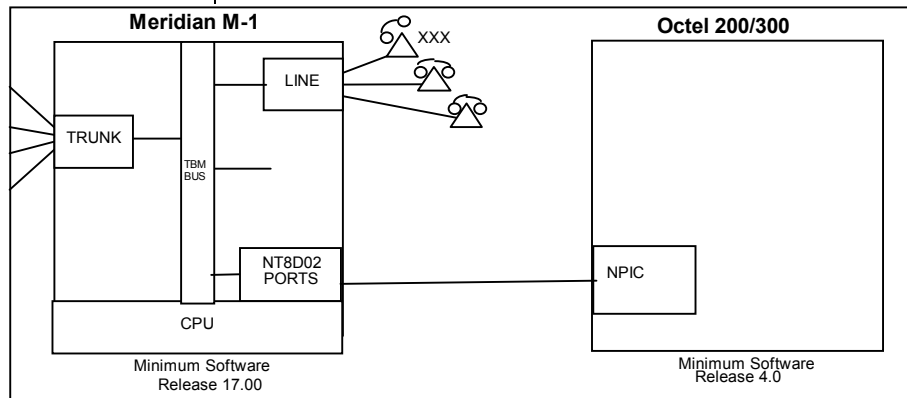


Octel 200/300
Message Server

Configuration Note 6193 - Rev D (06/01)

Nortel Meridian M1* (NPIC) ACD (EMEA)



The NPIC interprets call information from the M2616 ACD Display and sets and cancels message- waiting indicators

1.0 METHOD OF INTEGRATION

The NPIC controls up to 16 digital 2616 ports connected to the PBX, depending upon the number of Octel ports required. Each port connection to the NPIC appears to the M1 PBX as a Northern Telecom 2616 digital display telephone. The Octel 200/300 message server receives the necessary call information from the M1 2616 ACD agent consisting of NPIC ports. The ports perform both the function of collecting call information and answering/transferring the call. The NPIC commands the M2616 to read the call information from the display and transmit it to the Octel system which then answers with the appropriate personal greeting. Message Waiting is also performed using M2616 Digital Telephones, which are dedicated to that purpose.

2.0 OCTEL ORDERING INFORMATION

- Nortel Per Port Integration Line Card (supports up to 16 ports)
 - Adaptive Integration Software (F/P X0031)
- Serenade Software 4.0 or higher
- 25 pair cables with female end amphenol, one per NPIC card, long enough to connect the NPIC to the PBX mainframe which then connects to M2616 ports in the switch. The connection to the NPIC card is through a 25-pair amphenol, male connector.

Octel requirements

PBX hardware requirements**3.0 PBX HARDWARE REQUIREMENTS**

- NT8D02 Integrated Services Digital Line (ISDL) ports:
 - Revision AB or higher
 - Up to 16 ports
- QPC578 Vintage C or higher

NOTE: Subscribers with 2500 sets with message-waiting lamps (NE-2500 YQAs) must have special line cards (part number NT8D09) and power supply (part number QSU22) to light the message-waiting lights. If these components are not available, subscribers can use stutter dial tone for message-waiting indication.

3.1 PBX SOFTWARE REQUIREMENTS

Generic X.11, Release 17 to Release 25 with the following:

PBX software requirements

- EES, Enhanced End-to-End Signaling, Option 10
- SS25, Special Features for 2500 sets, Option 18
- DDSP, Digit Display, Option 19
- ACDA, Automatic Call Distribution, Option 45
 - Customers may need to purchase additional ACD agents, (“Right to use”) ACD Agents
- MWC, Message-Waiting Center, Option 46
- DSET, Digital Set, Option 88
- ARIE, Meridian Modular Telephone Set, Option 170
- Subscriber class of service to call forward (including all-calls, ring-no-answer and hunt-on-busy)
- Subscribers class of service for message-waiting

4.0 SUPPORTED FEATURES**Supported integration features**

- Station forward to personal greeting
 - all calls
- System forward to personal greeting
 - busy
 - ring-no-answer
- Message-waiting
 - lights
 - audible message-waiting (stutter dial tone)
- Direct call

- Personal greeting of originally-called party on double-call forward
NOTE: Nortel software allows only two forwarding steps on a ring-no-answer
- Reply to message left by subscriber in internal telephone-answering mode
- Automated attendant
- Multiple return-to-operator
- Outcalling

5.0 CONFIGURING THE M-1 PBX

Refer to PRM, Integration volume, MERIDIAN-1 NPIC for complete information.

Before beginning programming, it is recommended that a hard copy of the customer data block be printed in overlay 21 to verify the existing programming. It is also recommended that a hard copy of the terminal number block (TNB) be run for M-1 sets and for 2500 sets to show existing programming. Use overlay 20 to retrieve this information.

- ☐ If necessary, change the following parameters in overlay 15 to the underlined values. The default is in parentheses.

Programming PBX system parameters

REQ	CHG	
TYPE	CDB	Customer data block
CUST	0-31	Customer number
OPTIDP		Digit Display allowed
	MCI,	Message center allowed

Customers can selectively forward DID verses non-DID calls on busy or ring-no-answer condition. This can be done for calls being routed to the message center. Program the following as requested:

MDID	<u>YES</u> , (NO)	No-answer DID calls are (are not) routed to the Message Center
NDID	<u>YES</u> , (NO)	No-answer non-DID calls are (are not) routed to the Message Center
MWFB	<u>YES</u> , (NO)	DID calls encountering busy are (are not) routed to Message Center

There are four ways to which calls can be answered system-wide for non-DID and DID calls:

FDN = Follow forwarding DN
HNT = Hunt
ATT = Attendant

FNAD	FDN, HNT, ATT,	Program as required by your customer Forward DID calls
FNAN	FDN, HNT, ATT,	Program as required by your customer Forward non-DID calls
FNAL	FDN, HNT, ATT,	Program as required by your customer

- ☐ Calling Party Name Display must be programmed in LD 95 to show the condition of the forwarded call. Program the Calling Party Name display as follows;

REQ	CHG
CNFG	
MXLN	
STAL	
DFLN	
DES	
RESN	YES
CFWD	FWDA
CFNA	CFNA
HUNT	BUSY
PKUP	PKUP
XFER	
AAA	
NITC	

NOTE: Items left blank do not require changes.

5.1 PROGRAMMING THE ACD BLOCK

- ☐ Ports that are defined as ACD agents can operate in Position ID or Agent ID Login with the Meridian. Please note Agent ID is the preferred method and should be used in ALL integration cases. Agent ID is the simpler method for logon and more importantly it has been tested and verified in Europe. Position ID has not. In addition, a non-DID extension must be configured on Key 1, to allow the port to perform outcalls.

The first step is to define the ACD-DN for the Octel pilot number. This is done using Overlay 23. **Refer to section 5.2 to configure the**

PBX ACD configuration

ACD data block in an environment where CustomerControl Routing (CCR) is utilized.

REQ	NEW	To add an ACD data block TYPE
TYPE	ACD	Automatic Call Distribution data block (<i>See Note below</i>)
CUST	0-31	Customer Number
ACDN	xxxx	ACD directory number (ACD-DN = Octel Pilot Number)
MWC	YES	The ACD-DN is the message center DN (MC-DN)
MAXP	XX	Max number of ACD positions
SDNB	YES	
NCFW	XXXX	The Night Call Forward field can be used to redirect calls to an alternate position when all ports are in “make set busy” condition (logged out).
FORC	<u>NO</u>	Call Forcing Option - Set to NO
SPCP	YES	
CWTH	<u>0</u> -(1)-2047	Number of calls in queue before calls waiting indication - Enter 0 to disable
NCWL	<u>NO</u> (YES)	New call waiting lamp. Set to NO NOTE: The following two prompts will only appear once the schedule block has been built. These parameters must be set to NO, and not the default of YES.
HOML	<u>NO</u> (YES)	Handset removal or make set busy key is not allowed for logging out. Set to NO
RDNA	(<u>NO</u>)	Enhanced end-to-end signaling (OFF). Set to NO
RPRT	YES	

5.1.1 VERIFY POSITION VS AGENT ID LOGIN OPERATION

- The next step is to verify which mode the ACD application will operate i.e. Position ID or Agent ID Login. For this integration, ADS or SCB may appear or be programmed in the prompt field. Modify these fields as appropriate to the specific customer application.

REQ	PRT	Print the ADS
TYPE	ADS	
AID	YES	Customer will operate in the agent ID mode
LOG	(0)-999	Determines the maximum number of agents that can be logged at any one time. Verify that the PBX has the ability to support the number of ACD agents as there are Octel ports. The customer may need to purchase the right to use additional ACD agents. Lucent OMD recommends that the number of ACD agents allowed in Overlay 23 of the M1 switch exceed the number of Octel ports in order to increase future port capacity.
IDLB	(0001-9999)	Agent ID lower bound
IDUB	<IDLB> -9999	Agent ID upper bound

If the mnemonic entered at the prompt TYPE is SCB, verify the following based on the application:

Prompts	Possible Responses	
TYPE	SCB	
PRIO	123...15	Device numbers of devices use for output of reports
AID	YES	Customer will operate in the agent ID mode

The AID prompt is approximately nine prompts down from the SCB prompt.

IDLB	1-9999	Agent ID lower bound
IDUB<IDLB>	-9999	Agent ID upper bound
LOG (0)-999		Determines the maximum number of agents that can be logged at any one time. Verify that the PBX has the ability to support the number of ACD agents as there are Octel ports. The customer may need to purchase the right to use additional ACD agents. Lucent OMD recommends that the number of ACD agents allowed in Overlay 23 of the M1 switch exceed the number of Octel ports in order to increase future port capacity.

5.2 CONFIGURING THE ACD DATA BLOCK WHEN USING CUSTOM CONTROL ROUTING (CCR) APPLICATIONS

Refer to the note at the end of this section if your customer does not have the Custom Control Routing Feature.

Customers that have CCR can should take the following steps.

- The first step is to define the ACD-DN for the Octel pilot number. This environment is only supported with Serenade 4.0 or higher.

This is done using Overlay 23.

REQNEW		To add an ACD data block TYPE
TYPE	ACD	Automatic Call Distribution data block (<i>See Note below</i>)
CUST	0-99	Customer Number
ACDN	xxxx	ACD directory number (ACD-DN = Octel Pilot Number)
MWC	YES	The ACD-DN is the message center DN (MC-DN)
MAXP	XX	Max number of ACD positions
FORC	<u>NO</u>	Call Forcing Option - Set to NO

CWTH	<u>0</u> -(1)-2047	Number of calls in queue before calls waiting indication - Enter "0" to disable
NCWL	<u>NO</u> (YES)	New call waiting lamp. Set to NO NOTE: The following two prompts will only appear once the schedule block has been built. These parameters must be set to NO, and not the default of YES.
HOML	<u>NO</u> (YES)	Handset removal or make set busy key is not allowed for logging out. Set to NO
RDNA	(<u>NO</u>)	Enhanced end-to-end signaling (OFF). Set to NO
IVR	YES	Define this queue as an IVR queue
TRDN	leave blank	Treatment DN for IVR queue

- ☐ The second step is to define the Control Directory Number (CDN). This control directory number will be programmed to forward calls to the CCR queue.

This is done using Overlay 23.

REQNEW		To add an ACD data block TYPE
TYPE	CDN	Control directory number
CUST	0-99	Customer Number
CDN	xxxx	Control directory number
DFDN	xxxx	ACD DN, where calls queue

Customers can now create their CCR script to GIVE IVR with no treatment, which is the same as uninterruptable IVR.

In addition, customers will need to create a mailbox with COS Attribute 27 (Play greeting then go to next mailbox), with in order to disconnect the call and return to the hold in queue for IVR.

NOTE: *Customers that do not have the Customer Control Routing feature can program a "dummy" ACD agent with no members. The "dummy" ACD can then be forwarded to the queue of live agents. Call ID is*

preserved when a call is overflowed from one live agent queue to a second ACD queue then on to voice mail.

5.3 CONFIGURING THE M-1 TERMINAL NUMBER(S)

One 2616 TN is configured for each NPIC port with **ACD Configuration**.

Using overlay 11, program the M2616 sets that will be connected as links for the NPIC. Assign key 0 the extension number of the port Program one digital telephone for each Octel port. When defining the keys for each 2616, carefully follow the key allocations listed below.

2616 Set

REQ	NEW	
TYPE	<u>2616</u>	Digital set data block
TN	III S CC U	Terminal number: loop (0-159) shelf (0-1) card (1-10) unit (0-7)
CDEN	SD, (DD), 4D	Density of this card is single, (double), quad and is dependent on the type of PBX card is being used
CUST	0-31	Customer number
DESOCTEL1		Designation for telephone
CLS	CNDA*	Calling Name Display Allowed
	DNDA*	Dialed Number Display Allowed
	ADD	Allow Digit Display
	MWD	Message Waiting Denied
KEY	00 ACD XXXX XXXX AGN	PDN (Primary Directory Number Port 1)

***KEY 0 ACD XXXX zzzz YYYY** *** With Release 22 or higher Key 0 is programmed with a CLID number (zzzz) between the ACD DN XXXX and the Agent /Position ID YYYY. If the customer does not use the CLID feature, then the digit 0 must be defined in place of zzzz. This only applies when the customer has ISDN enabled.**

Programming the digital port for ACD Configuration

01 SCR XXXX	This number <u>MUST</u> be a unique Non-DID for each 2616 station, if key 1 is not programmed then outcalling will not function.
06 MSB	Make Set Busy
13 MIK	Message Indication Key
14 MCK	Message Cancellation Key
15 TRN	Transfer Key

Program one ACD station for each NPIC port.

NOTE:

- Keys not mentioned should be configured as blank keys.
 - It is important to ensure that the programmed ACD appearances exactly match the physical port connections to the Octel, and that the SLOTS table reflects the correct port numbers.
- ☐ Run a hard copy of the terminal number block (TNB) for each M-1 set to reflect and verify the additions and changes just made. Use overlay 20.

5.4 CONFIGURING THE 2616 TN(S) FOR MESSAGE WAITING

A group of ports NOT defined as members of the ACD must be configured for Message Waiting.

The DN assigned to key 0 is the primary directory number (PDN) and is a unique number that is not associated with the Octel ACD ports.

2616 Set

REQ	NEW	
TYPE	<u>2616</u>	Digital set data block
TN	III S CC U	Terminal number: loop (0-159) shelf (0-1) card (1-10) unit (0-7)
CDEN	SD, (DD), 4D	Density of this card is single, (double), quad and is dependent on the type of PBX card is being used
CUST	0-31	Customer number
DES OCTEL MW		Designation for telephone
CLS	FBD	Forward Busy Denied
	HTD	Hunting Allowed
	MWD	Message Waiting Denied
	CPTD	Forced Camp-on to another set Denied

KEY	00 SCR XXXX	PDN (Primary Directory Number)
	06 MSB	Make Set Busy
	13 MIK	Message Indication Key
	14 MCK	Message Cancellation Key
	15 TRN	Transfer Key

5.5 CONFIGURING THE SUBSCRIBERS TELEPHONE

2616 Set

REQ	CHG	
TYPE	<u>2616</u>	Digital set data block
TN	III S CC U	Terminal number: loop (0-159) shelf (0-1) card (1-10) unit (0-7)
CDEN	SD, (DD), 4D D8	Density of this card is single, (double), quad
CUST	0-31	Customer number
DESXXXXX		Designation for telephone
FDN Pilot	XXXX	Forward Directory Number (Enter the number of the Octel server)
CLS	FBA FNA HTA MWA CNDA* DNDA*	Forward Busy Allowed Forward Ring-No-Answer Allowed Hunting Allowed Message Waiting Allowed Calling Name Display Allowed Dialed Number Display Allowed
HUNT	XXXX	Extension to forward on a buys (Enter the Pilot number of the Octel server)
KEY	00 SCR XXXX 01 SCN XXXX xx MWK XXXX	PDN (Primary Secondary Number Message Waiting Key can be programmed on any other available key.

Octel Message Server Configuration

6.0 CONFIGURING THE OCTEL VOICE-PROCESSING MODULE

Refer to Installation and Maintenance Manual, Integration Volume, for complete information.

☐ SYSTEM PARAMETER TABLE:

- Set Parameter 3 to Northern Telecom Meridian 1 (7,4)
- Set System Parameter 33 to NONE
- Set System Parameter 45 to NONE
- Set System Parameter 46 to NONE
- Set System Parameter 77 to YES
- Set System Parameter 116 to YES
- Set System Parameter 117 to 5
- Set System Parameter 170 to NO
- Set System Parameter 296 to YES

☐ SLOTS TABLE:

The M2616 sets connect to the Octel via a 25 pair, 50-pin male amphenol connector. This 25 pair cable connects to P1 through P11 at the rear of the system. For correct functionality, each port must be set up to do either call processing or message waiting.

Note:- With Agent ID the Login ID field is left blank in the slots table below.

The following is an example of the Slot Table for the call processing ports using Agent ID mode:

<u>Slot</u>	<u>Card Type</u>	<u>Port</u>	<u>Ext #</u>	<u>COS</u>	<u>Mode</u>	<u>Outcall</u>	<u>Test</u>	<u>Login ID</u>
1	PICNT	1	1200	511	AX	Yes	No	

Message Waiting Link = None

LSP Table: PIC_NT

PRIMARY SYNC RECEIVER OF CLOCK

The following is an example of the Slot Table for Message Waiting:

<u>Slot</u>	<u>Card Type</u>	<u>Port</u>	<u>Ext #</u>	<u>COS</u>	<u>Mode</u>	<u>Outcall</u>	<u>Test</u>	<u>Login ID</u>
32	PICNT	16	1250	510	AX	NO	NO	

Message Waiting Link = 16

LSP Table: PIC_NT

SECONDARY SYNC RECEIVER OF CLOCK

When links are configured in the Slots Table, assign them in the following manner:

- Card Type: 52 for NPIC card, and the LSP Table must be selected. Enter 24 for PIC_NT.
- Configure all ports for AX answering mode.
- Outcall for ports configured for message waiting indication is set to NO. The other ports should have outcall set to YES to handle non-message waiting indication outcalls. (e.g., networking, off-site message waiting notification).
- Configure TEST for NO
- The LSPTAB Table is configured for the choice PIC_NT.

One NPIC in the message server must be designated as primary, to provide clock synchronization with the PBX digital card supporting the NPIC. When more than one NPIC card is installed in the message server, the second card is designated as secondary, and the third card as tertiary. The remaining cards installed are designated as NONE.

When ports are configured for message waiting assign them in the following manner: Start with port 16 on the last NPIC card, and using port 16 on each card, work towards the first NPIC. If additional message waiting capacity is desired, start with port 8 on the last NPIC card and work again toward the first card. This allocates message waiting activity evenly across processors in the NPIC card. There are two processors on each card, one for the first 8 ports and the second 8 ports. Additionally, if the links assigned to message waiting activity are spread across the cards and loops in the switch, the message waiting performance is better. (Call processing ports should also be spread across cards/loops on the switch.)

☐ Mailbox COS:

- Add attribute 6 to call extension first before playing greeting.
- Add attribute 9 to COS for sets with message waiting indicators.
- Add attribute 15 to COS for sets that call-forward to the Octel

☐ Port COS:

- Add attribute 58 to PORT COS for those ports used in special applications that do not require integration. These ports would be supported by analog line cards rather than the NPIC cards.

Verify that the digital channels of the NPIC are active

Steps to test the installation when completed

Important notes concerning this integration

7.0 TROUBLESHOOTING — VERIFY M-1 TNs ARE ACTIVE

- ☐ To ensure that the M-1 TNs are active, use overlay 32:

STAT XXXX Where XXXX is the TN of the M-1 programmed as an Octel port

The status displayed is either:

IDLE or DSBL

IDLE status is desired. If DSBL is displayed, enable them with the following in overlay 32:

ENLU XXXX Where XXXX is the TN of the disabled TN

7.1 TESTING THE INSTALLATION

Refer PRM, Integration Volume, Meridian M-1, section 13-1.

- ☐ Complete the test procedure listed in the I&M manual
- ☐ After completing the test procedure, delete all test mailboxes, and return any altered PBX name display programming to the desired entries.

8.0 CONSIDERATIONS/ALTERNATIVES

8.1 Verified software levels are 17 through 25.

8.2 Network Message Services is supported with the NPIC. The minimum software is Release 15, and requires the following software options: Network Message Services (option 175), Advanced ISDN Network Feature (option 148), ISDN Signaling (option 145), ISDN Primary Rate Access (PRA, option 146) or ISDN Signaling Link 1 (ISL, option 147), Message Center (option 46), End to end signaling (option 10), and Coordinated Dial Plan (CDP, option 59) or Network Automatic Route Select (NARS, option 58)

8.3 Automated Attendant/ECP applications transferring calls between NMS nodes may experience loss of integration. When Trunk Route Optimization is enabled on NMS trunks, calls transferred to stations on remote switches that forward without first ringing the station do not pass called party ID to the NPIC port. Customer can enable Trunk Tromboning which allows the Call ID to be retained throughout the call process.

8.4 Call Technical Support in order to get NPIC patches 3, 4, 7 and 8 loaded on this integration type.

8.5 If the NPIC ports that will act as ACD agents do not log on it is advised that the Serenade is restarted with a RESTA. Ensure this is done only after the NPIC patches have been applied.

8.6 Customers may experience a problem with Nortel Release 25.10; where the PBX does not provide the correct display information which is required to integrate correctly. Customers must request that Nortel install patch MPLR 12969 in order to resolve this problem. Nortel Release 25.15 and above has this patch incorporated as the 25.15 is the next maintenance release.

8.7 Although not critical to the NPIC ACD operation, please ensure MWI ports are put in a separate COS and are not in the main ACD hunt group. These ports will be free standing digital ports on the PBX. Also ensure this rule applies to the NPIC ports that will be performing call processing (the AX ports) and the Message Taking (MX ports). This will ensure that the reporting is accurate for port usage and port congestion assessments using list report 6.

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