297-2251-017

DMS-100 Family

TOPS IWS
NTDA Application Guide

IWS release 17.1 Post-GA   Standard12.04   August 2003

NORTEL NETWORKS

DMS-100 Family

TOPS IWS

NTDA Application Guide

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Publication history

August 2003

Document version.issue 12.04
Standard for load IWS 17.1
(Post-GA G3 release)

July 2003

Document version.issue 12.03
Standard for load IWS 17.1
(Post-GA G3 release)

June 2003

Document version.issue 12.02
Standard for load IWS 17.1
(G3 release)

April 2003

Document version.issue 12.01
Preliminary for load IWS 17.1
(G2 release)

November 2002

Document version.issue 11.01
Preliminary for load IWS 17.0
(G2 release)

September 2001

Document version.issue 10.02
Standard for load IWS 15.2
(G3 release)

September 2001

Document version.issue 10.01
Preliminary for load IWS 15.2
(G2 release)

June 2001

Document version.issue 09.02
Standard for load IWS 15.0 FU
(G3 CD release)

April 2001

Document version.issue 09.01
Preliminary for load IWS 15.0 FU
(G2 release)

September 2000

Document version.issue 08.03
Standard release for load IWS 14.0 CC
(G3 release)

September 2000

Document version.issue 08.02
Standard release for load IWS 14.0 CC
(G2 release)

September 2000

Document version.issue 08.01
Standard release for load IWS 14.0 BQ
(G2 CD release)

August 2001

Document version.issue 07.04
Standard release for load IWS 13.0 HP
(post-G3 release for SR resolution)

June 2000

Document version.issue 07.03
Standard release for load IWS 13.0 HP
(G3 release)

March 2000

Document version.issue 07.02
Standard release for load IWS 13.0 GJ
(G2 release)

March 2000

Document version.issue 07.01
Standard release for load IWS 13.0 FR
(G2 CD release)

August 1999

Document version.issue 06.02
Standard release for load IWS 12.0 AL
(G2 release)

August 1999

Version 06.01 Standard release for load IWS120AK
(G2 CD release)

May 1999

Version 05.05 Standard release for load IWS110BV
(G3 release)

May 1999

Version 05.04 Standard release for load IWS110BU
(G3 CD release for resolution of a service request)

March 1999

Version 05.03 Standard release for load IWS110BU
(G2 release)

March 1999

Version 05.02 Standard release for load IWS110BS
(G2 CD release)

November 1998

Version 05.01 Preliminary release for load IWS110BG
(G1A release)

November 1998

Version 03.05 Standard release for load IWS090BB
(Post-G3 CD release for PRS resolution)

August 1998

Version 04.02 Standard release for load IWS100BA
(G2 CD release)

June 1998

Version 03.04 Standard release for load IWS090BB
(G3 release)

May 1998

Version 04.01 Preliminary release for load IWS100AL
(G1A SMA release)

April 1998

Version 03.03 Standard release for load IWS090AZ
(G2 SMA release)

March 1998

  Version 03.02 Standard release for load IWS090AY
  (G2 CD release)

January 1998

  Version 02.04 Standard release for load IWS080AW
  (G2 SMA release)

December 1997

  Version 03.01 Preliminary release for load IWS090AN
  (G1A SMA release)

December 1997

  Version 02.03 Standard release for load IWS080AV
  (G2 SMA release)

December 1997

  Version 02.02 Standard release for load IWS080AS
  (G2 CD release)

October 1997

  Version 02.01. Preliminary release for load IWS080AO
  (G1A SMA release)

September 1997

  Version 01.02. Standard release for load IWS070CA
  (G3 LET0007 CD release)

July 1997

  Version 01.01. Preliminary release for load IWS070BW
  (G2A SMA release)

1.0 Introduction

This document is intended to provide the user with specific information regarding the Nortel Networks Directory Assistance (NTDA) application as part of the Traffic Operator Position System Intelligent Workstation (TOPS IWS). This information includes:

- a description of the displays made by NTDA

- basic call handling information

- datafill configuration for NTDA

A basic knowledge of directory assistance, the IWS system, the DOS environment, and the Microsoft Windows environment is assumed within this document.

The NTDA application provides a human-machine interface (HMI) to a directory assistance database. NTDA supports Nortel Networks Directory and Operator Services (D&OS) databases such as Directory One and LION.

This document describes the general NTDA application functionality and is not specific to any Nortel Networks D&OS database. Throughout this document, the term "NTDA database" refers to the database accessed by the NTDA application.

Throughout this document, the phrase "NTDA key action" is used when describing the use of an NTDA application-specific key. Refer to "XKBOARD.TBL" on page 83 for more information on the IWS keyboard, how the keyboard is used by the NTDA application, and NTDA application-specific keys.

1.1 NTDA in TOPS IWS

NTDA is an IWS application programmer's interface (API) compliant application component of the open architecture TOPS IWS system. Figure 1 illustrates the IWS software architecture including the NTDA application. The NTDA application is used to provide call handling for TOPS services at the IWS operator position that are based on access to one of the Nortel Networks databases listed in the previous section. Examples of these services are Directory Assistance, Intercept, and Customer Name and Address (CNA). The IWS Billing application (formerly NTOA/NTOA Plus) provides billing functionality on the IWS position with NTDA.

As of IWS Release 17.1, two types of IWS position configurations are supported, TDM positions and IP positions. For more information on IWS position configuration, see the *TOPS IWS Base Platform User's Guide*, 297-2251-010.
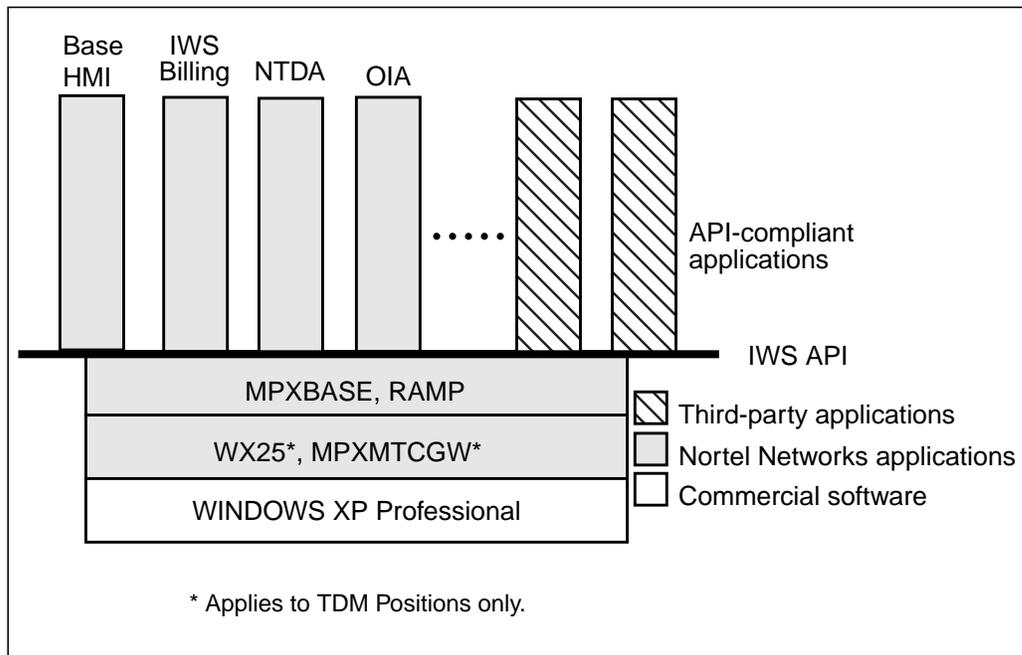
Figure 1. IWS software architecture

Note: The WX25 and MPXMTCGW applications apply to TDM Gateway positions only.

1.2 IWS system architecture with NTDA

To perform its functions, the NTDA application exchanges information with the DMS switch and with one of the Nortel Networks databases. As an IWS API-compliant application, NTDA receives information from and sends information to the DMS switch through the IWS base application. NTDA manages the application-level interface with the Nortel Networks database.

Communication with the database is accomplished with a direct connection, which uses commercial routers for communication to the database. The transmission control protocol/internet protocol (TCP/IP) is used to communicate between IWS positions and the database through the commercial routers.

1.2.1 System architecture with commercial routers

The Nortel Networks Directory One database supports an architecture that provides direct TCP/IP connectivity with the IWS local area network (LAN) through commercial routers. With the use of commercial equipment, system configurations can vary. However, from the perspective of the IWS LAN, all configurations are similar. IWS positions on the LAN have two database network addresses and two commercial router network addresses providing redundant connections to the databases. Because these configurations are based on commercial routers, other traffic besides communication between the database and the positions can be supported. The call control low-speed data links are attached from the DMS switch through an input/output controller (IOC) and multi-protocol controller

(MPC) card to the database. Figure 2 is an example of a possible configuration with commercial routers and the Directory One database. This configuration does not show the interface between the DMS switch and the audio announcement system within the database system.
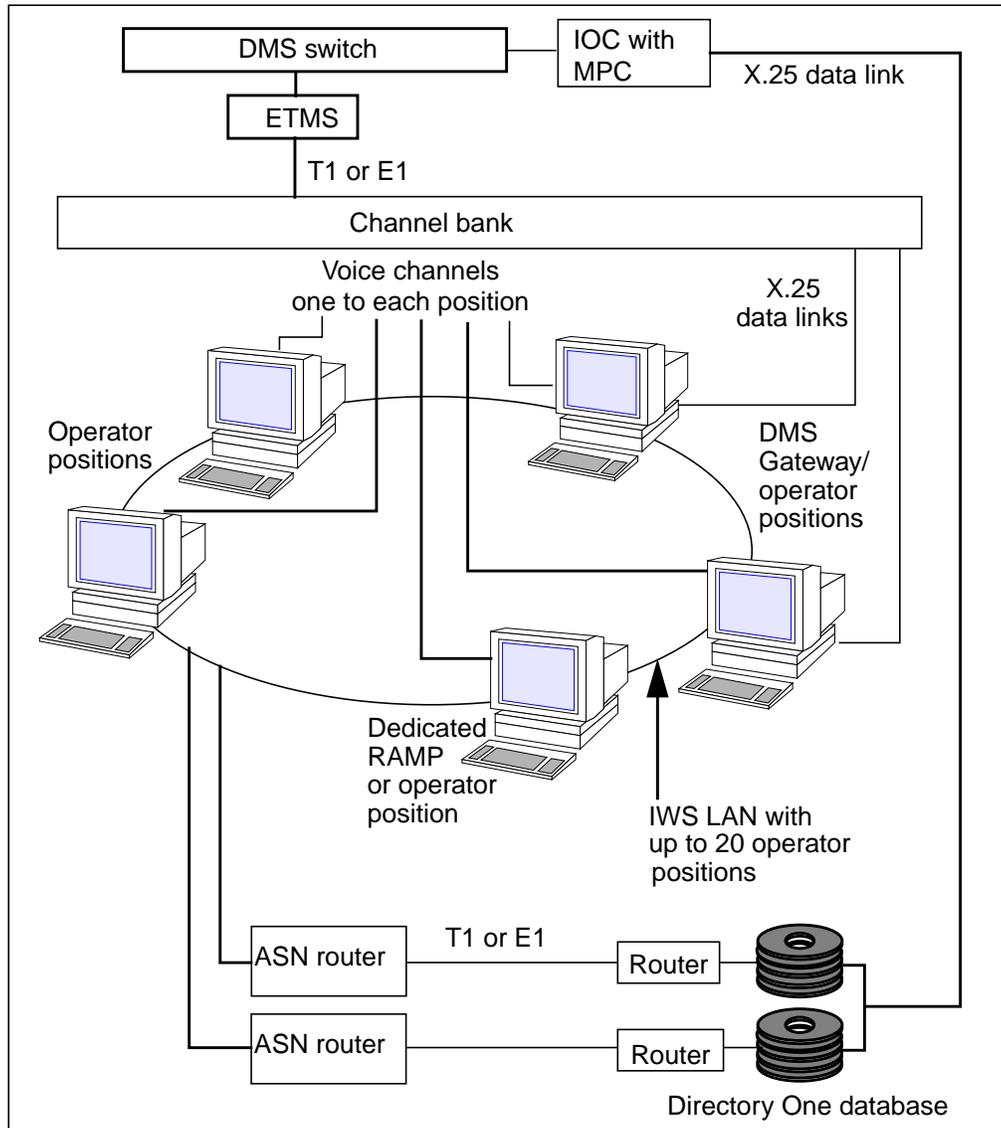
Figure 2. TOPS IWS NTDA system with commercial routers—token-ring configuration

Figure 3 is an example of a similar configuration with an Ethernet connection.
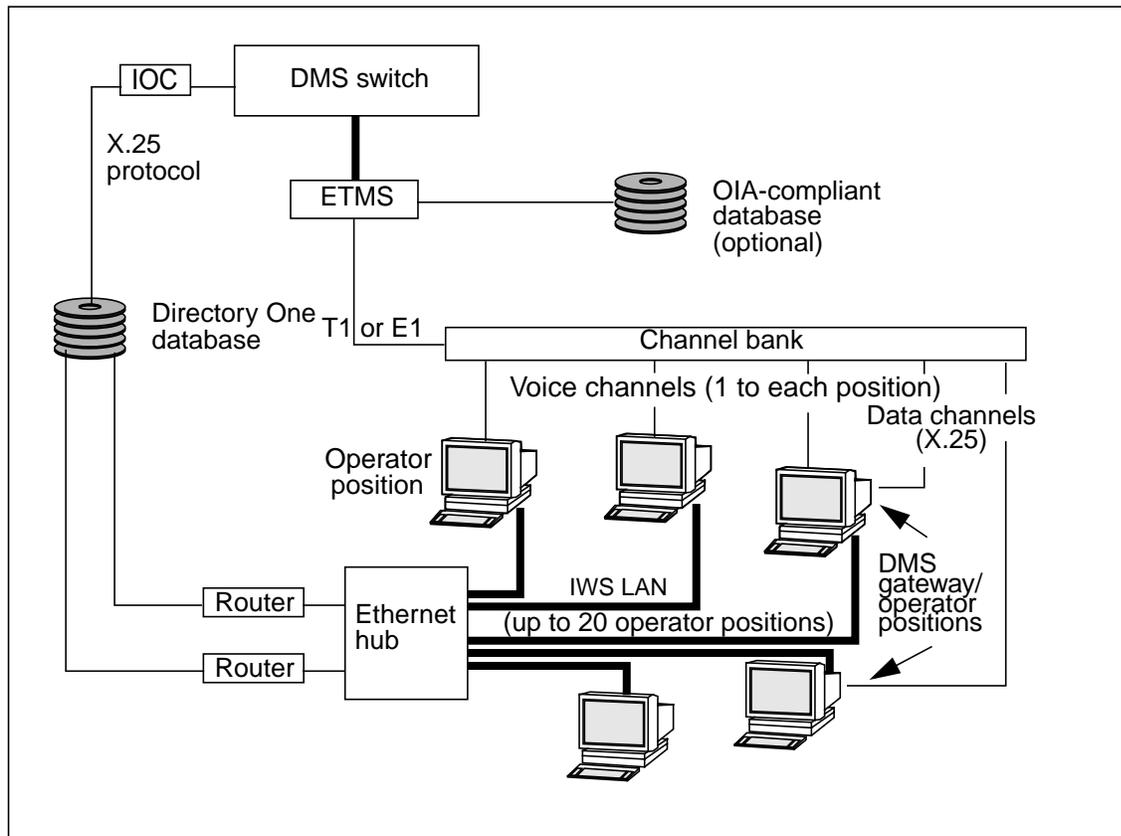
Figure 3. TOPS IWS NTDA system with commercial routers—Ethernet configuration

2.0 NTDA application window

Figure 4 shows the NTDA service screen, which is composed of the message/status area (MSA), the NTDA window, and the softkeys. The NTDA service screen displays when calls of TOPS service types provided by the NTDA application arrive at a position. The NTDA window is used by the NTDA application to display search and status information from the database and call information from the DMS switch. The NTDA window is also used by the operator for entering database search criteria and for initiating database searches.
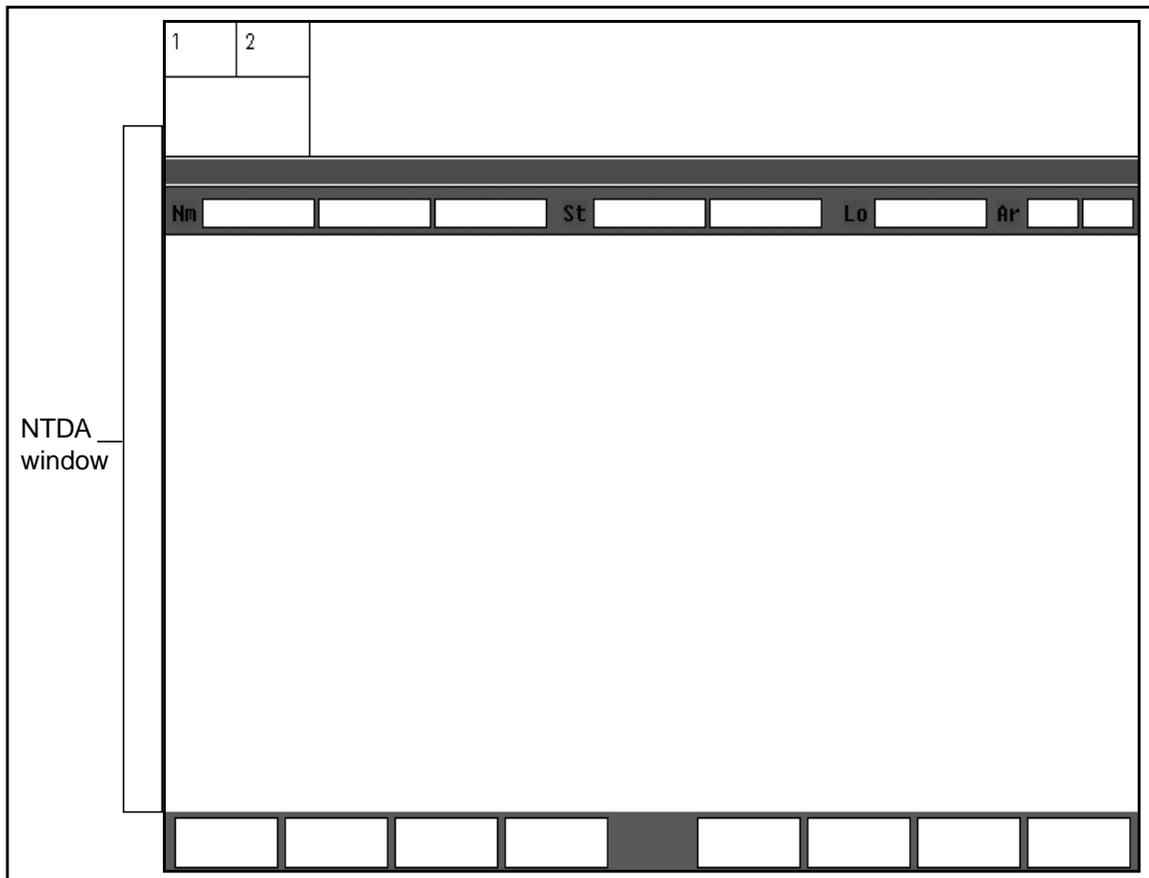
Figure 4. NTDA service screen

The NTDA window has several different areas, which are numbered and shown in Figure 5. The layout of some of these areas can be modified in IWS datafill. See "The Vertical Screen Order area" on page 57 for instructions on modifying the default layout.

Figure 5. NTDA window

Table 1 lists the window area names and their general purposes. Each of these areas is discussed in detail in the sections that follow.

Table 1. NTDA window areas

Window area name	Purpose
1 NTDA MSA line	An additional line added to the IWS MSA to display call related information
2 Call control message area	Contains call control message, language indicator, and search indicator
3 Search input fields	Used by the operator for entering search criteria
4 Error message area	Error messages returned from the database
5 Listing area	Listing information received from the database
6 Search message area	Search information received from the database

Figure 6 shows an example of the NTDA service screen while the operator is handling a call of a DA service type. This illustration shows the displays that are provided by the NTDA application in the NTDA window areas and in the IWS MSA and the softkeys.

Figure 6. NTDA service screen providing a DA service type call

Note the enhanced appearance of the NTDA service screen shown in Figure 6. The message status area, the NTDA data entry fields, and the softkeys all have a more three-dimensional appearance than in earlier releases. To see the difference, compare Figure 6 with Figure 4 on page 17.

The NTDA service screen shown in Figure 4 and Figure 6 is displayed with a screen resolution of 640 x 480 pixels. IWS supports using Windows XP Professional to change the screen resolution on individual positions. For information on how IWS is affected by changes in screen resolution, and for instructions on how to change screen resolution, refer to *TOPS IWS Base Platform User's Guide*, 297-2251-010.

In addition to the areas listed here, the NTDA application also provides an options menu window and a statistics window. The options menu window is described in section 2.8 on page 30. The statistics window is described in section 2.9 on page 32.

The following sections describe the displays made by the NTDA application in the NTDA service screen.

2.1 IWS MSA and NTDA MSA line

This section describes the displays made by NTDA in the IWS MSA and in the NTDA window area marked "1" in Figure 5, the NTDA MSA line. These areas are shown in Figure 7 below. The MSA is used to relay system-, service-, and application-specific information to the operator. The MSA is composed of a four-line text display area, two loop information blocks, and a port status information block. The NTDA application uses the IWS display library for many of its call displays. These displays are datafilled in IWS base HMI language file IDLMSA.LNG and appear in the fourth line of the MSA and in the transient field. The IWS MSA window and displays made by the IWS display library are discussed in detail in *TOPS IWS Base HMI Application Guide*, 297-2251-013.

The NTDA MSA line extends the IWS MSA to provide a fifth line for text displays. This section describes the displays made by NTDA in both of these areas. Throughout this discussion, the term "MSA" refers to the IWS MSA combined with the NTDA MSA line.

1	2		1
		Transient field	2
		(Branding) (Time and charges) (DB link status)	3
		IWS display library area	4
		(Call orig)(Clg sta class)(Clg number) (Restricted billing) (CT4Q)(Trk group/SPID)	5
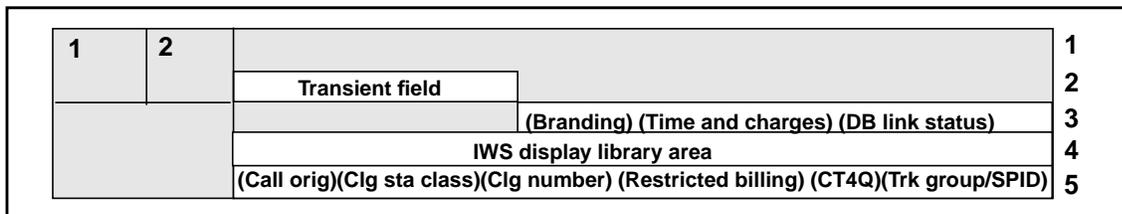
Figure 7. NTDA MSA fields

NTDA displays information in the transient field and in fields in the third and fifth lines of the MSA.

The NTDA text displayed in the MSA can be datafilled. The descriptions of these fields show the default text display strings and indicate the NTDA datafill files that contain the strings. For more information on NTDA application datafill, refer to "NTDA language data files" on page 74.

2.1.1 Transient field

The transient field displays information for approximately three seconds. Text displayed by NTDA in this field relates to login status and changing the highlighting mode.

During login to an NTDA administrative session, the following strings are displayed to indicate the login status. The text for these strings is in file NTDAMSA.LNG. Up to 20 characters can be datafilled for these strings. For more information on login, refer to "NTDA operator logon" on page 36.

NTDA Login Pending... string ID 28
Indicates the login request has been sent to the database and that NTDA is waiting for the response.

NTDA Login Failed string ID 29
Indicates the login attempt failed according to the database response to NTDA or a response was never received from the database. Reasons for login failure include an invalid operator number or an invalid position number.

> **NTDA Login Succeeded   string ID 30**
> Indicates the login attempt passed according to the database response to
> NTDA and that the operator is now logged in to the database. At this point the
> NTDA service screen is displayed and the operator can perform searches.

When the operator changes the listing highlighting mode by pressing the **{Select Hilight}**
softkey in the NTDA options window, the following strings display to confirm the change.
The text for these strings is in file NTDAMISC.LNG. Up to 26 characters can be datafilled
for these strings. For more information on how to change the highlighting mode, refer to
"{Select Hilight} softkey" on page 31.

> **No Highlighting...   string ID 16**
> Indicates that no database listings are to be highlighted.

> **Foreground Highlighting...   string ID 17**
> Indicates the text of alternating listings is to be highlighted.

> **Background Highlighting...   string ID 18**
> Indicates the background of alternating listings is to be highlighted.

> **Selected Highlighting...   string ID 19**
> Indicates listings corresponding to line designators entered by the operator are
> to be highlighted.

> **Database Highlighting...   string ID 20**
> Indicates the NTDA database is to control highlighting of listings.

2.1.2 Branding field

The branding field overlays the IWS MSA application message I field and displays icons
to indicate whether the call has been branded by an automated system before arriving at
the position. Table 2 shows the branding icons that display in the MSA.

Table 2. Branding icons

Icon name	Icon	Description
branded		The call has been branded by an automated system prior to arriving at the position.
not branded		The call has not been branded by an automated system prior to arriving at the position.

2.1.3 Time and charges field

The time and charges field overlays the IWS MSA application message I field and
indicates that the operator has requested that time and charge information be quoted to the

billing party upon subscriber disconnect. Up to five characters can be displayed in this field. The text for this string is in file NTDAMSA.LNG.

   T&C   **string ID 45**

2.1.4 Database link status field

The database link status field overlays the IWS MSA application message II field and indicates the status of the NTDA application links to the database. The icons shown in Table 3 display to indicate this status.

Table 3. Database link icons

Icon name	Icon	Description
links down		Both links to the NTDA database are down. No communication to the database is possible until at least one link is recovered.
link down		A link to the NTDA database is down, but communication to the database can continue on the unaffected link.
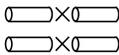
If nothing is shown in this field, both database links are in service and available for communication to the database. Section "Link Alarm Service:" on page 64 explains how to set the parameter that requests link state alarms.

2.1.5 Call origination field

Call arrival information text displays in the call origination field and is supplied through the IWS display library. More information on the IWS display library call arrival strings can be found in *TOPS IWS Base HMI Application Guide*, 297-2251-013. The information displayed in the call origination field includes the service type and call origination information including the call type, call arrival status, or reason for operator information, whichever is appropriate. This field can contain up to 18 characters.

The IWS display library obtains text strings for the call arrival information from several IWS base datafill tables. The service type text comes from TOPS IWS file XSERVS.TBL and may contain up to six characters. The call type information comes from TOPS IWS file XCLLORIG.TBL and may contain up to ten characters. The call arrival status text comes from file XCASTS.TBL and may contain up to ten characters. Refer to *TOPS IWS Base Platform User's Guide,* 297-2251-010, for the description of files XSERVS.TBL, XCLLORIG.TBL, and XCASTS.TBL. The reason for operator information text comes from IWS base HMI language file IDLMSA.LNG and may contain a maximum of ten characters. For more information on IDLMSA.LNG, refer to *TOPS IWS Base HMI Application Guide*, 297-2251-013.

2.1.6 Calling station class field

This field contains information about the calling station class. The calling station class information text may be up to eight characters. The text strings are in file NTDAMSA.LNG:

Station   **string ID 0013**

Indicates the calling party is at a normal station phone.

Coin Pre   **string ID 0014**

Indicates a calling station class of prepay coin. The call originated from a coin telephone and the coins required to pay for the call must be deposited prior to the call connection.

Coin Post   **string ID 0015**

Indicates a calling station class of postpay coin. The call originated from a coin telephone and the coins required to pay for the call must be deposited after call connection.

Hotel   **string ID 0016**

Indicates the call originated from a hotel.

Aps   **string ID 0017**

Indicates the call originated from an attendant pay station.

Marine   **string ID 0018**

Indicates the call originated from a marine location.

Mobile   **string ID 0019**

Indicates the call originated from a mobile unit such as a cellular phone.

2.1.7 Calling number field

The directory number of the calling party displays in the calling number field. The text is supplied through the IWS display library and is based on information received from the DMS switch. More information on the IWS display library calling number string can be found in *TOPS IWS Base HMI Application Guide,* 297-2251-013. Up to 19 characters can be displayed in the calling number field.

If the calling number is valid, it displays formatted, with separators.

An invalid calling number displays unformatted. If the number is invalid but is not received from the DMS switch, a question mark (?) displays.

If automatic number identification (ANI) fails and the DMS switch cannot identify the directory number at call arrival, the numbering plan area (NPA) and exchange (NXX) display with an "X" character indicating ANI failure. If no digits are available for display, the "X" character displays alone.

If the DMS switch cannot identify the directory number at call arrival, the NPA and NXX display with a "?" to indicate an operator number identification (ONI) call. If no digits are available for display, the "?" displays alone.

If a directory number is required by the DMS switch but is missing and an ANI failure has not occurred and the call is not an ONI call, a "?" displays.

If Caller Id Blocking is enabled, "X" characters replace formatted digits.

If the calling number field display indicates that the calling number is invalid or missing, an ANI failure has occurred, or the call is an operator number identification (ONI) call, the operator may need to send the calling party number to the DMS switch. The operator enters the calling party number in the IWS billing application. In these cases the call may arrive in the NTDA service screen or in the IWS billing application screen. If the NTDA service screen is displayed in this situation, the operator presses one of the keys defined by NTDA to perform a context change to access the IWS billing application screen. For information on changing to the IWS billing application while the NTDA service screen is displayed, refer to "Accessing the IWS Billing application screen" on page 40.

2.1.8 Restricted billing information field

Restricted billing text for the calling party displays in the restricted billing information field. The text is supplied through the IWS display library. More information on the IWS display library restricted billing string can be found in *TOPS IWS Base HMI Application Guide,* 297-2251-013. The IWS display library obtains text strings for the restricted billing information from IWS base tables XRBLG, XDARBLG, or XOLNSEQP. This field may contain up to eight characters.

If the call is an originating line number screening (OLNS) call, the string is taken from the OLNS equipment table, XOLNSEQP.TBL. If the call is not an OLNS call, the string is taken from either file XRBLG.TBL or XDARBLG.TBL, based on the datafill information in IWS base file XSERVS.TBL for the service type of the call. Refer to *TOPS IWS Base Platform User's Guide,* 297-2251-010, for detailed descriptions of files XSERVS.TBL, XRBLG.TBL, XDARBLG.TBL, and XOLNSEQP.TBL.

2.1.9 Call type for queuing (CT4Q) field

The call type for queuing for the call is displayed in the CT4Q field when the Queue Management System (QMS) is used for routing TOPS calls to the position. The text displayed in the CT4Q field is taken from IWS base table XCT4Q. This field may contain up to ten characters. Refer to *TOPS IWS Base Platform User's Guide,* 297-2251-010, for a detailed description of file XCT4Q.TBL.

2.1.10 Trunk group/SPID field

The incoming trunk group or the service provider identification (SPID) of the call is displayed in the trunk group/SPID field. The text displayed in the trunk group/SPID field is supplied through the IWS display library and may contain up to eight characters.

More information on the IWS display library trunk group/SPID string can be found in *TOPS IWS Base HMI Application Guide*, 297-2251-013. The IWS display library obtains text strings for the trunk group from TOPS IWS file XTGDSPL.TBL. The SPID display text is received from the DMS switch. Refer to *TOPS IWS Base Platform User's Guide,* 297-2251-010, for the description of file XTGDSPL.TBL.

2.2 Call control message area

The call control message area is made up of three fields: the call control message field, language indicator field, and search indicator field. The call control message line and its fields are shown in Figure 8.

(	Call control message field	) (Lang) (Search type)

Figure 8. NTDA call control message area

2.2.1 Call control message field

The call control message field displays text information from the database. Up to 56 characters can be displayed in this field. Examples of information that may be sent from the database for display in this field include "verbal report required" or "announceable."

2.2.2 Language indicator field

The language indicator field displays the language for audio announcement for the current call. Depending on call information and information from the database, an indicator for one of the supported languages is displayed in the language indicator field at call arrival. Examples of language indicators include the following:

E	indicating English
S	indicating Spanish
F	indicating French
X	indicating that the call is not eligible for release to audio announcement

When the ADAS Plus feature is used, the language indicator field occasionally displays in inverse video to indicate either that no language information has been received or that information is uncertain.

2.2.3 Search indicator field

The search indicator field displays text information about a requested search. Up to ten characters can be displayed in this field.

When the search response information is received from the database, a text string is displayed in this field to indicate the type of search performed. This text is received from the database. Examples of search indicator text that may be sent from the database for display in this field include "RES" (residential), "BUS" (business), and "GOV" (government).

Some search indicator field displays can be datafilled to blink. The interval at which the search indicator field blinks is also datafillable. Refer to "Blink Search Types area" on page 65 and "Blink Interval (ms):" on page 63 for more information.

When the ADAS Plus feature is used, the search indicator field occasionally displays in inverse video to indicate either that no information has been received or that the information is uncertain.

The two strings shown following can display in this field.

> **Waiting...**   **string ID 0022**
>
> When the operator requests that the database perform a search by pressing one of the search keys, a text string indicates that NTDA is waiting for a response from the database. When the search response is received from the database, this text string is replaced by a search indicator display from the database as described below. This text is datafilled in file NTDAMISC.LNG.
>
> **Repeat**   **string ID 0021**
>
> If a search response is not received from the database within twenty seconds, a text string is displayed indicating that the search must be repeated by the operator. This text is datafilled in file NTDAMISC.LNG.

Refer to "Performing NTDA database searches" on page 41 for more information on performing searches.

2.3 Search input fields

The operator can enter database search criteria in the eight search input fields. The fields are shown in Figure 9 and are identified below. Each of the eight fields is called a minor field. The minor fields are grouped together into four major fields where criteria for name, street, locality, and area can be entered. The labels for these major fields are datafillable. The placement of these major fields within the search input line is also datafillable. Refer to "The Horizontal Fields Order and Names area" on page 61 for more information on this datafill.

| Nm | 1 | 2 | 3 | St | 4 | 5 | Lo | 6 | Ar | 7 | 8 |

Figure 9. Default NTDA database search input fields

- Name major field
  1. Name1 minor field
  2. Name2 minor field
  3. Name3 minor field

- Street major field
  4. Street1 minor field
  5. Street2 minor field

- Locality major field
  6. Locality minor field

- Area major field
  7. Area1 minor field
  8. Area2 minor field

2.3.1 Data entry

To perform a search, data must be entered into some of the search input fields. The fields that must be filled in and the data that must be entered depend on the type of search the operator is to perform. When the call arrives at the position, several fields often contain default data sent from the database. The default data can be changed and empty fields can be filled by moving the cursor to the field and typing information directly into the field. Up to nine characters can be entered into fields 1–6 and up to four characters can be entered into fields 7–8. You can input any ASCII alphanumeric characters in these fields. Also, you can enter any ASCII characters datafilled as an "Extra ASCII Code." However, to remove any data entry restrictions and allow data entry of any character, set the "International" datafill flag to indicate that all characters should be allowed including all international language characters defined in the ISO Latin I character set. The "Extra ASCII Codes" and "International" datafill settings are described in "Extra ASCII codes area" on page 70 and "Extended Characters (International) area" on page 70, respectively.

There are also methods available for automatically entering data into fields. The operator can enter data automatically into the locality and area fields by pressing a locality softkey. Refer to section "NTDA softkeys" on page 29 for more information on locality softkeys. Data can be entered into the field containing the cursor automatically by using a datafillable NTDA common finding name (CFN) key. Data can be entered into all eight fields automatically, or a search trigger specified, by using a datafillable NTDA hardkey. See "Common Finding Names" on page 71 and "Hardkeys" on page 71 for more information on the functionality of these types of keys.

When the ADAS Plus feature is used, the search input fields occasionally display in inverse video to indicate either that no information has been received or that the information is uncertain.

2.3.2 Data editing

Several NTDA keys are available for maneuvering through the fields and for editing data that has been entered into the fields. The following table contains the names and NTDA key action numbers of the keys that can be used. Refer to Table 24 on page 88 for detailed information on the actions performed by each key.

Table 4. NTDA data editing keys

Key action	Functional description
2	Clear all fields
3	Clear field
4	Clear name and street fields
5	Cursor left
6	Cursor right
7	Delete
8	Next major field
9	Next minor field
10	Next field

Table 4. NTDA data editing keys (Continued)

Key action	Functional description
11	Reset all fields
12	Name field
13	Name1 field
14	Name2 field
15	Name3 field
16	Street field
17	Street1 field
18	Street2 field
19	Area field
20	Area1 field
21	Area2 field
22	Locality field

There are also datafillable options that control data editing in the search input fields. Refer to the following sections which describe these options: "Clear Field on Initial Edit" on page 66, "Typing Across Field Boundaries" on page 66, "Truncate Field on Tab" on page 66, and "Truncate Field on Search" on page 66.

2.4 Error message area

The error message area displays error text information from the database. Up to 80 characters can be displayed in this field. An example of information that may be sent from the database for display in this field includes "key more information." The text in this line can also be displayed in red to draw the operator's attention to it. This option is datafillable. Refer to "Error Line Always Red" on page 67 for more information.

2.5 Listing area

The listing area displays subscriber directory information from the database as a result of performing a search. This text information is formatted completely by the database. The listing area can display up to 21 lines of information with 80 characters on each line. Depending on the call type, the database may send information for display in the listing area at call arrival.

Sometimes the results of a search will contain more listings than can be displayed in the listing area. In this situation the database sends information for display in the search message area indicating that there are additional listings. IWS provides the generic keys listed in the following table to maneuver through these additional listings. Refer to Table 24 on page 88 for detailed information on the actions performed by each key.

Table 5. IWS generic listing keys

Key action	Functional description
30	Half page backward
31	Half page forward
28	Page backward
29	Page forward

2.6 Search message area

The search message area displays text information from the database regarding the state of the listing display. Up to 80 characters can be displayed in this field. Examples of information that may be sent from the database for display in this field include "no more listings" or "page for more listings."

2.7 NTDA softkeys

The IWS softkey labels display at the bottom of the NTDA service screen. These softkey labels correspond with the eight keys on the top row of the keyboard. Two seven-character strings can be displayed in each of the eight softkey labels. The string displayed on the bottom row of the softkey label identifies the function that is invoked when the operator presses the softkey without the shift key. The string displayed on the top row of the softkey label identifies the function that is invoked when the operator presses the softkey with the shift key.

When the operator logs into the IWS position or starts an administrative session with NTDA, the database sends softkey label display and softkey functionality information to NTDA. When a call arrives in the NTDA service screen or when the operator is in administrative search mode, the softkey labels display the text information received from the database at login.

Locality and NPA information are the two types of softkey information received from the database. The locality labels display for all call types and administrative sessions except intercept service calls. Pressing a locality softkey fills in the locality, area1, and area2 fields of the search input fields with the associated locality information received from the database.

The NPA labels display for all intercept service calls. Pressing an NPA softkey fills in the area1 field of the search input fields with the NPA information received from the database.

2.8 NTDA options menu window

The NTDA options menu lists the search mode options available to the operator. Selecting a search mode option from the options menu places the operator into a mode where he or she can perform searches of the selected type. The search mode options displayed in the window are determined by NTDA position datafill and the operator's permissions, which are defined in the database by the operator number. Use NTDA Setup to select the options to display. See "The Display Options window" on page 63. An example of the NTDA options menu window is shown in Figure 10.
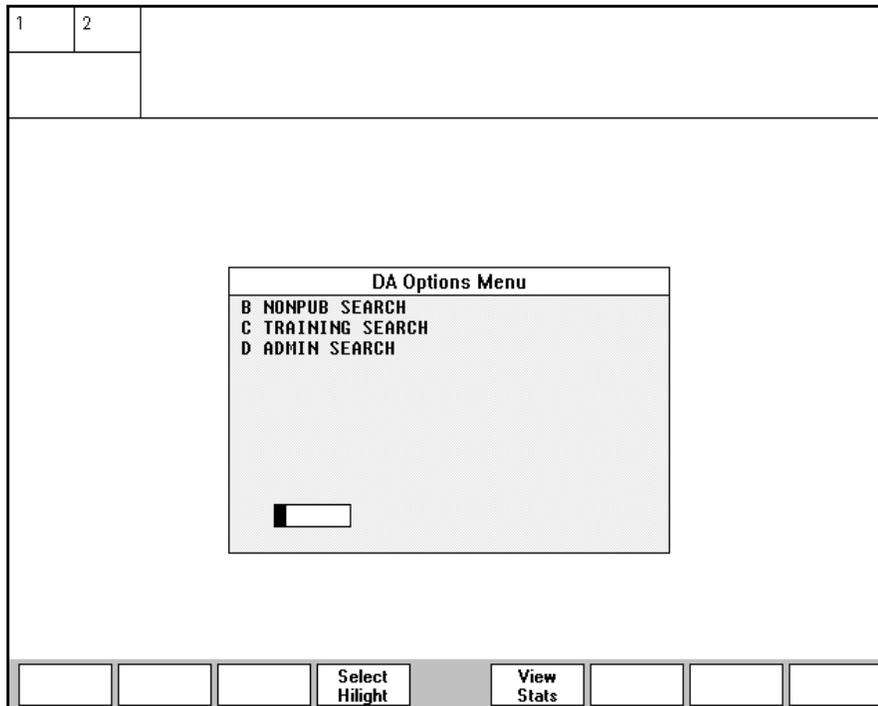
Figure 10. NTDA options menu window

> **DA Options Menu**   **string ID 0000**
> The window title displayed in the NTDA options menu window is datafillable. Text for the string is in NTDA file NTDAMISC.LNG. Up to 15 characters can be datafilled for this string.

Based on the position and database datafill, NTDA determines which search mode options to display in the options menu window. The text display and the associated identifier for each option are datafillable in NTDA file NTDAMISC.LNG. Up to 36 characters can be datafilled for the option text and one character can be datafilled for the identifiers. Following are the search mode options and the associated default text:

> **NONPUB SEARCH**   **string ID 0004**
>
> **B**   **string ID 0003**
> Nonpublished search mode causes display of all directory numbers, including nonpublished numbers.

TRAINING SEARCH   **string ID 0006**

C   **string ID 0005**

Training search mode is for operator training.

ADMIN SEARCH   **string ID 0008**

D   **string ID 0007**

Administrative search mode is used to perform searches when no call is at the position. A service assistant or customer service expert might use the administrative search mode to look up a number that a general operator cannot find.

The options menu window is displayed when you press the NTDA options menu key (NTDA key action 28) from within the NTDA service screen when there is no call at the position. The window appears in the center of the screen, overlaying the listings area. To select a search mode option from the menu, enter the identifying letter in the input field and press **Start**. Use either the Windows backspace key or the IWS generic backspace key (IWS key action 10) to edit the entry prior to pressing **Start**.

The options menu window can be taken down without selecting a search mode by pressing the NTDA options menu key (NTDA key action 28) again or by pressing **Start** with no entry in the input field. The options menu window is taken down automatically when a call arrives at the position and the operator is automatically switched back to call search mode for call handling.

When a search mode option is selected from the options menu, the options menu is taken down and the NTDA service screen is displayed again. Any searches done at this point are now in the selected search mode. If a call arrives at the position while in another search mode, the operator is automatically switched back to call search mode for call handling.

When the options menu window is displayed, the softkey labels are changed to the softkey labels shown in Figure 10. The following sections describe the functionality of these softkeys.

2.8.1 {Select Hilight} softkey

The **{Select Hilight}** softkey allows the operator to toggle through the different listing highlighting schemes. When this softkey is pressed, a text string indicating the new listing highlighting scheme displays momentarily in the transient field of the MSA. Refer to "Transient field" on page 20. for details on the associated transient field displays. To toggle through each of the listing highlighting schemes, continue pressing the **{Select Hilight}** softkey until the desired listing highlighting scheme is displayed in the transient field of the MSA. Refer to "The Highlight Listings area" on page 65 for more information on the different listing highlighting schemes.

Text for the **{Select Hilight}** softkey label is datafilled in file NTDAINI.INI. Refer to "NTDA options menu window softkey labels" on page 78 for more information.

2.8.2 {View Stats} softkey

The **{View Stats}** softkey displays the NTDA statistics window. Refer to "NTDA statistics window" on page 32 for more information on the NTDA statistics window.

Text for the **{View Stats}** softkey label is datafilled in file NTDAINI.INI. Refer to "NTDA options menu window softkey labels" on page 78 for more information.

2.9 NTDA statistics window

The NTDA statistics window displays login session statistics such as total number of DA calls handled, average number of keystrokes for each call, and DA call average work time (AWT) in seconds. The NTDA statistics window displays when the **{View Stats}** softkey is pressed in the NTDA options menu window or when the NTDA view statistics key (NTDA key action 27) is pressed in the NTDA service screen or in the NTDA options menu window. The operator can remove the NTDA statistics window by pressing any key on the keyboard.

Statistics for this Session			
	Calls	Keys	AWT
DA	5	8.5	21.54
Intercept	0	0.0	0.00
Total	5	8.5	21.54

Figure 11. NTDA statistics window

The operator statistics displayed in the NTDA statistics window are those that are gathered locally in the position and may not reflect statistics compiled by the database or the DMS switch. These statistics are for each login session, only for NTDA database calls, and do not include non-call work volume.

AWT is calculated as follows:

$$AWT = \frac{\text{DA call busy work volume (CBWV)}}{\text{call volume}}$$

DA CBWV refers to the amount of time, in seconds, the operator has spent in processing calls of TOPS service types handled by the NTDA application. Call volume refers to the number of those calls.

The window title and the column and row heading labels displayed in the NTDA statistics window are all datafillable. The text for the strings is in NTDA file NTDAMISC.LNG.

Statistics for this Session   string ID 0009

The NTDA statistics window title text can be up to 27 characters in length.

Calls   string ID 0010

Keys   string ID 0011

AWT   string ID 0012

The NTDA statistics window column headings text can be up to seven characters in length.

DA   string ID 0013

Intercept   string ID 0014

Total   string ID 0015

The NTDA statistics window row headings text can be up to 13 characters in length.

3.0 Call processing

This chapter describes NTDA call processing tasks, including linking to databases, logging on, handling call arrival, accessing the IWS Billing Application screen, changing the TOPS service type of the call, performing database searches, accessing IWS menus, using the IWS scripting window, accessing the IWS save screen functionality, releasing a call, and logging off.

3.1 NTDA database links

This section describes how database links are initialized, explains how to change the position number at the DMS switch, and lists database link state changes.

3.1.1 NTDA database link initialization

When the IWS position is restarted, the NTDA application initializes and the NTDA database links come up automatically. If the links do not come up, a facilities problem exists with the position, the link, or the database. Rarely, the links do not come up automatically when the position is restarted even though there is no facilities problem. These cases are as follows:

- the IWS position is installed with IWS software for the very first time

- the hard drive is reformatted to remove all software and then IWS software is installed

In these situations when the position is restarted following installation of the software, the NTDA application creates an IWS position log with the following text:

```
NTDA links cannot be brought up until the position is brought into
service (RTS) by the DMS switch.
```

As stated in the log, once the position is returned to service from the DMS switch, the NTDA database links will come up automatically.

3.1.2 Changing the IWS position number

If you change the position number of an IWS position at the DMS switch, the steps must be performed in a certain order for communication on the NTDA database links to perform properly. To perform each step you may require more detailed information. Refer to the appropriate DMS switch and database documentation for more detailed information on changing datafill and performing maintenance on these systems. The following lists the basic steps:

1. Busy the IWS position at the DMS switch.

2. Change the number of the IWS position in DMS datafill. Verify that this new number is also datafilled in the NTDA database. If it is not, change NTDA database datafill to add in this new number.

3. RTS the position from the DMS switch so the IWS position is informed of the new position number.

    4.   Restart the IWS position so that the NTDA application will reinitialize the NTDA database links with the new position number.

3.1.3 NTDA database link state changes

During initialization when the links are coming up or following initialization if one or both of the links changes state, either going into or out of service, NTDA takes the following actions to indicate the state change of the link or links.

- If the NTDA service screen is displayed, a database link status indicator is displayed in the MSA database link status field. Refer to "Database link status field" on page 22 for more information on the link status displays.

- NTDA generates the appropriate IWS position log with the following text:
  - `No NTDA Links Up`
  - `One NTDA Link Up`
  - `All NTDA Links Up`

- NTDA sends information about the state of the links to the DMS switch. The DMS switch then generates a DMS alarm indicating the appropriate situation:
  - `All links out of service`
  - `Link 0 out of service`
  - `All links in service`

  You can control the generation of NTDA database link state alarms by datafill in file NTDAINI.INI, which is discussed in "Link Alarm Service:" on page 64.

3.2 NTDA operator logon

The operator can log on to the NTDA database by two methods. The first is done automatically during logon at the TOPS IWS position. At the logo screen, the operator presses **Start** and obtains the standard IWS logon screen. This type of logon provides for connection to the DMS switch, and allows processing of TOPS service type calls provided by NTDA. If the DMS switch indicates that logon to a TOPS service provided by the NTDA application is required, then the NTDA application will automatically log on to the NTDA database. The result of the database logon is indicated in the IWS base HMI assigned activities window, which displays the list of services available from the position after logon. If NTDA database logon fails, the services provided by NTDA display in grey. If NTDA database logon passes, the services provided by NTDA are displayed in black. Logon to the TOPS IWS position is discussed in *TOPS IWS Base HMI Application Guide,* 297-2251-013.

The second method for logging on to NTDA provides access to an NTDA application session for administrative searches only, thus the logon is to the NTDA database only. The operator presses **Start** at the logo screen and then presses the **{Pos Profile}** softkey to see the list of available applications and log on to the NTDA database.

When the NTDA application is selected from the IWS applications menu, the NTDA application session logon window is displayed. This window is shown below in Figure 12. This window contains two fields, the operator ID field and the password field. The text labels for these fields are datafillable. Text for these strings is in NTDA file NTDAMSA.LNG. The text strings can be up to 15 characters long.

> **Operator ID**   **string ID 26**
> Label text for the operator ID field.
>
> **Password**   **string ID 27**
> Label text for the password field.

Figure 12. Default NTDA application session logon window

When the NTDA application session logon window is displayed, the cursor is located in the operator ID field. Enter up to four numeric characters in this field for the operator ID and then press the **Start** key. The cursor then moves to the password field. If a password is required, enter up to seven alphanumeric characters in this field for the password and then press **Start**. If no password is required, just press **Start**. In both fields, either the Windows or the IWS generic backspace key (IWS generic key action 10) can be used to delete the previous character. Also when the maximum number of characters has been entered in either of the fields, the next character entered causes the characters in the field to be erased and returns the cursor to the beginning of the field.

If the operator wishes to return to the IWS base HMI operator administration window without requesting the NTDA application session logon, this can be done by pressing one of the keys defined by NTDA to perform a context change. For information on context changing, refer to "Accessing the IWS Billing application screen" on page 40.

When the operator ID and password information are entered, the NTDA application requests logon to the NTDA database. The status of the logon displays in the MSA transient field as discussed in "Transient field" on page 20. If the logon fails, the IWS base HMI operator administration window displays again. If the logon succeeds, the NTDA service screen displays and the operator can then perform administrative database searches. Refer to "Administrative searches" on page 42 for more information on performing administrative searches.

3.2.1 NTDA-only logon

For an NTDA database-only logon, there may be certain cases where the position ID that is stored on the terminal is either incorrect or not present, so DA logon fails. Such a situation might arise during an installation of new IWS positions or when a terminal is being used solely for DA administration. Normally, the DMS switch provides the position ID for the terminal, but in these cases you must provide the correct position ID by adding it to the C:\WINDOWS\MTCAPI.CFG file as shown in the steps below:

1. Select the Run menu from the Windows Start menu.

2. In the Open field, type or select Command.

3. Select OK.
    An MS-DOS window opens.

4. Type

    ```
    edit C:\WINDOWS\MTCAPI.CFG
    ```

    The MTCAPI.CFG file opens.

5. Use the down arrow key to look for the [POSADDR] section of the file, which may or may not exist.

6. If you find the [POSADDR] section, type in the correct position ID. (Address=XXXX, where XXXX is the position ID.)

7. If you do not find the [POSADDR] section, use the down arrow key to move to the bottom of the file, and add the following entry:

    ```
    [POSADDR]
    Address=XXXX
    ```

    where XXXX is the position ID.

8. Select File and Exit.

9. At the Save File prompt, select Yes.

10. Restart the position and try to log on to the NTDA database.

Note: If you are still unable to log on, check the connection to the NTDA database and verify the operator ID and the position ID in NTDA database datafill.

3.3 Call arrival

On call arrival for a TOPS service that is provided by the NTDA application, the NTDA service screen is displayed if billing for the call is already satisfied or is not required. If billing is not satisfied, the IWS Billing application screen is displayed to allow the operator to satisfy billing before performing the actions in the NTDA application. Once billing information is entered in the IWS Billing application and billing for the call is satisfied, the operator can switch to the NTDA service screen by pressing the context change key as defined by the IWS Billing application. For information on keys used to change context to the service screen, refer to *IWS Billing Application User Guide*, 297-2251-016.

During a call arrival, information is sent from both the DMS switch and the NTDA database to the NTDA application. It is occasionally possible that some of the information is not received. Reasons for this may be that the call control link between the DMS switch and the NTDA database is down or that the information message is lost during communication to the IWS position. In these cases, the operator may notice unusual screen displays. The following lists possible call arrival scenarios and the actions to take:

- The NTDA service screen displays with call arrival information from the DMS switch but no information from the NTDA database displays. After a two-second delay, the NTDA database information displays in the NTDA service screen. The database will indicate "verbal report required" meaning the operator cannot release the call for audio announcement of the requested number. Instead, the operator must verbally quote the number to the caller.

- A screen other than the NTDA service screen is displayed prior to call arrival. When the call arrives, the operator hears the audible call arrival tone but there are no call displays. The operator must invoke the call details function from the IWS functions menu to cause display of all the call information. Refer to *TOPS IWS Base HMI Application Guide*, 297-2251-013, for more information on the IWS functions menu and the call details function.

- The NTDA service screen displays when the call arrives and NTDA database information displays, but no other call information displays in the MSA. The operator must invoke the call details function from the IWS functions menu to cause display of all the call information. Refer to *TOPS IWS Base HMI Application Guide*, 297-2251-013, for more information on the IWS functions menu and the call details function.

In the last two situations, an informational IWS position log is generated by the NTDA application with the following text:

- `There will be no stats sent to the Gateway for CallID:xxxx. A DMS Call Begin was not received within the 10 second timeout interval.`

In the last two situations, it is also possible that an informational IWS position log is generated by the NTDA application with the following text:

> — `Received Call End from DMS with no matching Call Begin. Message ignored.`

3.4 Accessing the IWS Billing application screen

During the course of a call, it may be necessary to switch to the IWS Billing application screen to perform some billing function. After performing this function, the operator may need to return to the NTDA service screen to continue providing the service for the call. "Context change" is the term given to moving between the service screen and the billing screen during a call. When you perform a context change, you are not changing the TOPS service type of the call; therefore, no AMA record is generated. For more information on changing the TOPS service type of the call refer to "TOPS service change" on page 40.

To move from the NTDA service screen to the IWS Billing application screen, any of the following keys from the IWS generic key set may be used. Refer to *TOPS IWS Base Platform User's Guide*, 297-2251-010, for more information on the IWS generic key set.

Table 6. NTDA context change keys

Key action	Functional description
13	Misc field
14	Inter-LATA carrier field
15	Special field
16	Called field
17	Calling field
41	Context change
152	Account

To move from the IWS Billing application screen to the NTDA service screen, press one of the keys defined as a context change key by the IWS Billing application. Refer to the *IWS Billing Application User Guide*, 297-2251-016, for more information on which key or keys perform context changes back to the call service screen.

3.5 TOPS service change

During the course of a call, it is sometimes necessary to change the TOPS service type of the call. For example, the operator may need to change a DA TOPS service call to a toll TOPS service call either to complete the call to the requested number or because the caller mistakenly requested the DA service. To change the TOPS service type of the call, enter the line designator of the requested listing, if there is one, in the Name1 search input field. Then, access the IWS services menu. Enter the number of the desired TOPS service and press **Start**. For more information on access to the IWS services menu from the NTDA service screen, refer to "Services menu" on page 49. For more information on using the IWS service menu, refer to *TOPS IWS Base HMI Application Guide*, 297-2251-013. Note that when the TOPS service type of the call is changed, an AMA record is generated.

3.6 Performing NTDA database searches

While the NTDA service screen is displayed, whether in or out of a call, NTDA database searches can be performed. The basic steps to performing a search include entering search criteria in the search input fields, discussed in "Search input fields" on page 26, and then pressing an NTDA database search key. At this point the search request is sent to the NTDA database. While the NTDA application is waiting for a response from the NTDA database, no keyboard input can be made by the operator. When the NTDA database responds with the search results, the operator can again use the keyboard for input. Occasionally, the NTDA database search response may not be received due to communication error. In this case the search request should be repeated. Appropriate search status messages are displayed in the MSA search indicator field to indicate that a database search is outstanding, the search response was not received, and that the search response was received. Refer to "Search indicator field" on page 25 for more information about these displays.

In the event that the search response is not received, an informational IWS position log is generated by the NTDA application with the following text:

> — `Search Timeout, Missing Search Response.`

3.6.1 NTDA database search types

The first search that the operator performs with particular database search criteria is called an initial search. If the database cannot find listings corresponding to the database search criteria, or if the operator cannot locate the desired listing in the listings returned from the database, a subsequent search can be performed. A subsequent search uses the same search criteria entered for the initial search, but causes the database to be searched in a different manner.

The following table lists the different types of initial searches supported by the NTDA application along with the NTDA key action code corresponding to the search key and a brief description of the search. Note that not all databases support each of the search types. Refer to documentation for the database to determine which search types are supported.

Table 7. NTDA application-supported initial searches

Search type	Key action	Functional description
Business member	32	Input a type of business. Listings for each member of that business type are returned.
Business	33	Listings matching the business name are returned.
Category	34	Input a category of business. Listings containing a matching category value are returned.
Customer Name and Address (CNA)	35	Input a directory number. The listings matching this directory number are returned.
Government	40	Listings matching the government name are returned.
Intercept	43	Input a directory number. The intercept database is searched to find this directory number.
Residential	49	Listings matching the residential name are returned.

Table 7. NTDA application-supported initial searches (Continued)

Search type	Key action	Functional description
Special (Special business)	51	Listings matching the special name are returned.
Street	175	Listings matching the street information are returned.

The following table lists the different types of subsequent searches supported by the NTDA application along with the NTDA key action code corresponding to the search key and a brief description of the search. Note that not all databases support each of the search types. Refer to documentation for the database to determine which search types are supported.

Table 8. NTDA application-supported subsequent searches

Search type	Key action	Functional description
Dropped field	37	Performs the search without including data from any optional input field. The fields that are dropped are defined in the database.
Expanded locality (Expanded place)	38	Geographically extends the defined locality being searched.
Full set	39	Displays all members of one caption set, regardless of whether or not they match the locality or other input. An example of a caption set is a large business that has many specific directory numbers associated with it, like a department store.
Alternate order (Keyword)	44	Searches for the listing using a different word order.
Phonetic	48	Provides listings with names that are phonetically equivalent to the entered name or that are operating company-defined alternate spellings.

When the initial search returns more listings than can fit within the listing area, four IWS generic paging key actions can be assigned to display the rest of the listings. These key actions are page backward, page forward, half page backward, and half page forward.

3.6.2 Administrative searches

Administrative searches are database searches that are performed when a call is not at the position. Administrative searches can be performed by supervisory operators to locate directory numbers that general operators cannot find and also by operators to practice NTDA searches.

Administrative searches can be performed prior to logon to the DMS switch at an IWS position by starting an NTDA application session. The NTDA application session is started through the IWS applications menu as described in "NTDA operator logon" on page 36.

Following logon to the DMS switch at an IWS position, two methods are available for

performing an administrative search.

- An NTDA application session can be started by accessing the IWS applications menu from any IWS screen that allows access to that menu. Select NTDA in the application menu. At this point the NTDA service screen is displayed and then administrative searches can be performed. Refer to *TOPS IWS Base HMI Application Guide*, 297-2251-013, for more information on the IWS applications menu. If an operator begins an administrative search session from the applications menu when a call is already at the position, the operator cannot release the call to an automated announcement. If the call comes from a subscriber line that is designated as not to be released to an automated service, the no automation icon appears in the directory assistance window. However, the language field displays the indicator for the primary or secondary language, not the X that indicates no audio.

- An NTDA application session can be accessed through the NTDA options menu window. For more information on entering administrative search mode, refer to "Accessing the IWS Billing application screen" on page 40.

To exit an administrative search session, press one of the keys defined by NTDA to perform a context change. For information on changing context, refer to "Accessing the IWS Billing application screen" on page 40. An administrative search session also ends automatically when a call arrives at the position.

3.6.3 Previous searches

An internal NTDA buffer automatically saves previous search criteria and corresponding search types. Up to five searches are saved in this buffer. This buffer is subsequently referred to as the "previous search list."

To access the saved searches in the previous search list, two NTDA key actions exist: "Previous Search" and "Next Search." The Previous Search key action goes back through the previous search list accessing saved searches. The Next search key action goes forward through the previous search list accessing saved searches. Next search is only applicable if the previous search action has been keyed.

The Previous Search list is populated on a per call and per DA administrative session basis. Thus this list is cleared at the end of every call and at the end of every DA administrative session. Searches done in a prior call can not be accessed during the present call or present administrative session. Searches done in a prior administrative session can not be accessed during the present administrative session or the present call. If an operator does more than five searches on a call or within an administrative session, only the last five searches are saved. For example, a call arrives at the position and the operator does seven different searches. The operator can then redo the last five searches by just keying previous search five times. The operator can only redo the first two searches by manually re-keying those searches.

Only primary (base) search types are saved in the Previous Search list. Secondary searches are not saved in the previous search list. The saved primary search types include:

- Residential search

- Business search

- Special business search

- Government search

- Full set search

- Customer Name and Address (CNA) search

- Street search

- Category search

- Business member search

- Street search

- Intercept search

For every search sent to the Directory One system, the previous search's criteria and types are saved in the Previous Search list. This saved information includes:

- NAME1 field text

- NAME2 field text

- NAME3 field text

- STREET1 field text

- STREET2 field text

- LOCALITY field text

- AREA1 field text

- AREA2 field text

- Search type (e.g. residential, business, government)

The following diagram shows the DA screen just after a Previous Search key press and the subsequent Directory One response:

```
┌─────────────────────────────────────────────────────────────────────────┐
│ ┌───┐ ┌───┐ ┌─────────────────────────────────────────────────────────┐ │
│ │ 1 │ │ 2 │ │                                                         │ │
│ └───┘ └───┘ │                                                         │ │
│             │                                                         │ │
│             └─────────────────────────────────────────────────────────┘ │
└─────────────────────────────────────────────────────────────────────────┘
H×××××× GN005 VERBAL REPORT REQUIRED                        E RES
Nm LEE           |       |       |  St |       |       |  Lo WESTMINST Ar 410 X
```

```
WESTMINSTER---

A    LEE B  111 HOLLOW ROCK AV  WESTMINSTER....................... 848-1805
     LEE BILL & KAREN  711 CHERRYTOWN RD  WESTMINSTER SYKESVILLE
C       TEL NO.................................................... 857-3559
D    LEE C M  59 CHARLES ST  WESTMINSTER.......................... 857-3835
E    LEE C P  3977 LITTLESTOWN PKE  WESTMINSTER................... 848-6246
F    LEE CHARLES  506 YELLOW LILY CT  WESTMINSTER................. 848-3696

H    LEE H  WESTMINSTER........................................... 857-0820
I    LEE JAMES C  WESTMINSTER..................................... 751-9325
J    LEE JOHN P  5019 BAND HALL HILL RD  WESTMINSTER............. 346-7912
K    LEE K  147 W MAIN ST  WESTMINSTER............................ 751-9563
     LEE KAREN & BILL  711 CHERRYTOWN RD  WESTMINSTER SYKESVILLE
M       TEL NO.................................................... 857-3559
N    LEE KRISTY  1179 GREEN MEADOW LN  WESTMINSTER............... 857-3709
O    LEE KYU C MD
P       OFC  542 WASHINGTON RD  WESTMINSTER....................... 876-3116
Q       OFC  542 WASHINGTON RD  WESTMINSTER REISTERSTOWN TEL NO... 876-6500
R    LEE LANE B  1910 PATRICIA CT  WESTMINSTER.................... 857-0227
S    LEE MARY K MRS  32 CHASE  WESTMINSTER....................... 848-6870
D  120  PAGE FOR MORE LISTINGS
```

AMISSVI	BRIGHTW	BLUEMON	BANCO		CASTLET	HOOD	GAITHER	AREA
WESTMIN	TANEYTO	PARKTON	CAMBRID		NEW WIN	HAMPSTE	RESTON	BERRYVI

Figure 13. Previous Search attempt

Note that the indicator "RES" appears in the DA search type field. This search type is displayed because the previous search was a residential search. "PREVIOUS" and "NEXT" and any form thereof will not show up as the search type; instead, the saved base search will show up as the search, e.g., RES, BUS, or GOV.

When a Previous Search is not available, an error message is displayed in the IWS MSA transient field. This scenario can occur for several different reasons. One example is if the operator tries to do four previous searches, but only keyed in three searches previously. Another example is if the operator attempts a previous search without first doing an initial search. The following figure shows the error message, "Previous Search not allowed":

```
 ┌─┬─┐
 │1│2│ Previous Search not allowed
 ├─┴─┤
 │   │
 │   │
 H****** GN005 VERBAL REPORT REQUIRED                        E RES
 Nm HALL        │         │         St │        │        │ Lo WESTMINST Ar 410 X

WESTMINSTER---

A      HALL A RICHARD   709 REDWOOD DR   WESTMINSTER................   848-9518
B      HALL BRYAN  1908 PATRICIA CT  WESTMINSTER..................   857-4960
C      HALL C A   151 SMITH AV  WESTMINSTER........................   848-6073
D      HALL CATHERINE C  448 LOGAN DR  WESTMINSTER.................   848-2255


G      HALL M E  1412 WASHINGTON RD  WESTMINSTER..................   857-5849
H      HALL MIKE  WESTMINSTER.........................................   857-1428
I      HALL MILLARD F  770 WINCHESTER DR  WESTMINSTER.............   857-5720
J      HALL R  400 BALDWIN PARK DR  WESTMINSTER....................   857-1672
K      HALL RALPH E  458 E GREEN ST  WESTMINSTER...................   848-8560

M      HALL TERRY R  900 GORSUCH RD  WESTMINSTER...................   848-2539
N      HALL THOMAS A  3817 RINEHART RD  WESTMINSTER...............   346-7784
O      HALLFORD M  700 EAGLES CT  WESTMINSTER......................   848-3967



D  121  PV TEST - NO MORE LISTINGS
┌────────┬────────┬────────┬────────┐   ┌────────┬────────┬────────┬────────┐
│AMISSVI │BRIGHTW │BLUEMON │BANCO   │   │CASTLET │HOOD    │GAITHER │AREA    │
│WESTMIN │TANEYTO │PARKTON │CAMBRID │   │NEW WIN │HAMPSTE │RESTON  │BERRYVI │
└────────┴────────┴────────┴────────┘   └────────┴────────┴────────┴────────┘
```

Figure 14. Previous search not allowed error message

Similarly, when a Next Search is not available, then an error message is displayed in the IWS MSA transient field. This scenario can occur for several different reasons. One example is if the operator tries to do three Next searches, but only previously keyed two previous searches. The MSA would display the "Next Search not allowed" error message.

3.6.3.1 Previous search monitoring

On a monitoring position, the error messages, "Previous Search not allowed" and "Next Search not allowed" will not be displayed because these displays are local to the monitored position. The previous search and next search listings will be displayed just as any DA search, but the monitoring operator may not be able to determine the difference between previous and next search keying versus search re-keying.

3.6.4 Audio mode

If "Highlight Selected Listings" is turned on in the Display Options window, the user is in audio mode after search results are displayed. A character entered in the Name1 field is interpreted as a line designator, and the listing associated with the letter is highlighted.

Each additional line designator that is typed also appears in the Name1 field, and its associated listing is also highlighted.

Audio mode is enabled and disabled with NTDA Setup. In the Display Options window, under Highlight Listings, choose "Highlight Selected Listings." If "Highlight Selected Listings" is not chosen, then audio mode does not apply.

The operator can exit audio mode by pressing the Exit audio key, which is an NTDA application-specific key (key action # 25). The operator can then input criteria for another search. Also, pressing this key clears the Name1, Name2, and Name3 fields as well as Street1 and Street2, and places the cursor at the beginning of the Name1 field.

3.6.5 Language selection

If a language other than English is desired, pressing the NTDA alternate language key (NTDA key action 23) toggles the selection between the primary and secondary languages. The language that is currently selected is displayed in the language indicator field. The display text for the language indicators can be datafilled in NTDA Setup. One character can be datafilled for each of the language indicators. Examples of language indicators include:

E English

S Spanish

F French

X the call is not eligible for release to audio announcement

In some cases the operator may not want to release the current call to audio announcement. To prevent the call from being released to audio, the operator can press the NTDA no audio (also known as block audio) key (NTDA key action 26). In this case an "X" character displays in the language indicator field to indicate the selection. The block audio function only remains in effect for the duration of the current call. Upon arrival of the next call, the default language for audio announcement is reset as appropriate for the call.

In other cases, the call arrives with an "X" character in the language indicator field and the no automation icon (▓) in the MSA to indicate that the call has not gone to any automated service and that the operator cannot release the call to an automated service (including an audio announcement). However, if the subscriber requests an automated service, the operator can do either of the following:

- Press the NTDA no audio toggle key.
- Select function Allow Automation from the functions menu.

Either action removes the two indicators, displays the language indicator either for the primary or secondary language, and sends a message to the DMS switch to allow release to an automated service. If the operator presses the NTDA no audio key again, the "X" character reappears. However, the DMS switch continues to allow release to automation.

3.7 IWS menu access

The NTDA application provides access to all of the IWS menus from the NTDA service screen both when a call is at the position and when no call is at the position. Some of the operator actions taken from the menus are not applicable if a call is not at the position. These actions are ignored by the DMS switch. Refer to *TOPS IWS Base HMI Application Guide*, 297-2251-013, for details on the functions, services, applications, trouble, outtrunks, and CT4Q menus. For information on hot keys for these menus, refer to *TOPS IWS Base Platform User's Guide,* 297-2251-010, in the base file XKBOARD.TBL description.

For each menu, a set of hot keys can be defined. A hot key is a single key that invokes a specific function (or service, application, trouble, outgoing trunk, or call type for queueing

(CT4Q)) found in the menu. A hot key replaces the series of keystrokes that might be necessary to reach a highly used menu item. For information on hot keys for these menus, refer to the documentation on file XKBOARD.TBL in *TOPS IWS Base Platform User's Guide,* 297-2251-010.

3.7.1 Functions menu

The operator presses the IWS generic key set **Fncts** key to access the IWS functions menu.

3.7.2 Services menu

The operator presses the IWS generic key set **Svcs** key to access the IWS services menu.

3.7.3 Applications menu

The operator presses the IWS generic key set **Appl** key to access the IWS applications menu.

3.7.4 Trouble menu

The operator presses the IWS generic key set **Trbl** key to access the IWS trouble menu.

3.7.5 Outgoing trunks menu

The operator presses the IWS generic key set **OGT** key to access the IWS outgoing trunks menu.

3.7.6 CT4Q menu

The operator presses the IWS generic key set **CT4Q** key to access the IWS call type for queueing (CT4Q) menu. Before the **CT4Q** key can be used, it must be bound to a key on the IWS keyboard. For information on using the KeyBind utility, refer to *TOPS IWS RAMP and Provisioning Guide*, 297-2251-015.

3.8 IWS scripting window

The NTDA application can display the IWS scripting window (the Call Script window) in the NTDA service screen. This window provides a text area on the screen to display a title and a message (a script) with information for the operator. With IWS enhanced scripting this information can be based on various call parameters.

Nortel Networks strongly recommends that IWS enhanced scripting be used instead of older IWS standard scripting. Standard scripting is only supported to provide complete backwards compatibility with pre-IWS17 customer scripting datafill. Note that enhanced scripting completely supports the use of pre-IWS17 script messages, so changes to existing script messages are not necessary. For detailed information about enhanced scripting, standard scripting, and scripting-related datafill, refer to *TOPS IWS Base HMI Application Guide*, 297-2251-013.

3.8.1 Standard scripting

With IWS standard scripting script messages can be based on only one of the following three call parameters:

- SPID
- CT4Q
- call origination type

When the scripting window displays, the NTDA application determines the appropriate script message to present, based on the call information received from the DMS switch. In the IWS base file SCRPTINI.INI, the default datafill for the NTDA application specifies the display of script text in the order of priority shown in Table 9.

Table 9. NTDA scripting priorities and cross-reference files

Scripting priority	Scripting cross-reference file
1. SPID	NTDASPID.TBL
2. CT4Q	NTDACT4Q.TBL
3. Call origination type	NTDACORG.TBL

Once NTDA determines which call information to use, the NTDA application accesses an NTDA scripting cross-reference file to determine which script message from the SCRPTSCR.SCR file to display in the IWS scripting window. Table 9 lists the NTDA cross-reference files used for each type of data.

After determining which script ID from the cross-reference files is appropriate for the call, NTDA determines whether the IWS scripting window should be displayed automatically. To make that determination, it refers to the Enable entry for the NTDA application in the IWS base SCRPTINI.INI file. An Enable entry of 0 indicates that the IWS scripting window will not display automatically at call arrival. An Enable entry of 1 indicates that the IWS scripting window will display automatically at call arrival.

For detailed information about the IWS scripting window and scripting-related datafill, refer to *TOPS IWS Base HMI Application Guide*, 297-2251-013.

3.8.2 Appearance of the scripting window

The location and size of the IWS scripting window can be datafilled in IWS base datafill file SCRPTINI.INI. Figure 13 shows the location and size of the scripting window in the NTDA service screen as a result of the default datafill for NTDA. For more information on NTDA application datafill in this file, refer to "SCRPTINI.INI" on page 107.

Figure 15. IWS scripting window in the NTDA service screen

The IWS scripting window can be made to display automatically at call arrival, based on call information received from the DMS switch. (By default, IWS scripting for NTDA is disabled in the IWS base file SCRPTINI.INI.)

To minimize the chance that the scripting window will cover any directory listings while it is displayed, the Nortel Networks default datafill locates the window near the bottom of the NTDA service screen, as shown in Figure 15, and its shape is more horizontal than vertical.

Note: The default placement of the scripting window assumes that the IWS default screen resolution of 800 x 600 is being used. An operating company can change the datafill in the SCRIPTINI.INI file to customize the size, shape, and placement of the scripting window. Changing the size, location, and placement is especially useful if another screen resolution is used.

Table 10 provides the settings suggested for various screen resolutions.

TABLE 10. Suggested NTDA scripting window size and placement for other screen resolutions

For 640 x 480 screen resolution	For 800 x 600 screen resolution	For 1064 x 768 screen resolution
XPos=13	XPos=5	XPos=207
YPos=213	YPos=299	YPos=450
Width=274	Width=356	Width=274
Height=150	Height=180	Height=150

3.8.3 Operator keying with the scripting window

The scripting window displays automatically at call arrival, however, it does not automatically receive keyboard focus. This means that the operator does not have to press the **Start** key in order to return focus to the NTDA application window to handle the call. The size and placement of the script window allows the operator to access all the data entry fields on the NTDA service screen. Therefore, at call arrival, the operator can quickly check the contents of the script window and then proceed without delay to the appropriate call handling keystrokes.

When the operator keys in search criteria (such as a surname) and presses a search key (such as the residential search key), the scripting window immediately automatically disappears. If the operator presses a call processing key (such as the **CLD** key), the scripting window also automatically disappears, and the active IWS application switches from NTDA to the IWS Billing window, with the cursor placed in the CLD field. If the operator uses the services menu to change to another service while the scripting window is displayed, the scripting window also automatically disappears.

At any time during the call, the operator can press the **Script Window Display** key action to display the IWS scripting window. Pressing this key action causes the window to display, regardless of how the NTDA Enable entry is set in file SCRPTINI.INI. When the IWS scripting window is displayed in this manner, it contains the script message that would have been displayed at call arrival. Pressing the **Start** key removes the scripting window.

While the scripting window has focus, the operator can use the arrow keys to sort through scripts and select different script messages to appear in the window. For detailed information on how to use the scripting window, refer to *TOPS IWS Base HMI Application Guide*, 297-2251-013.

On DA recalls where DA listings may automatically appear at call arrival, if the scripting window obscures some DA listings, the operator can simply press the **Script Window Display** key action to give keyboard focus to the scripting window, and then press the **Start** key to remove the scripting window. At any time during the call, the operator can press the **Script Window Display** key action to re-display the scripting window as needed.

3.9 IWS save screen

The IWS save screen capability can be accessed by pressing the IWS generic key set screen capture key while in the NTDA service screen. For information on the IWS screen capture capability refer to *TOPS IWS Base HMI Application Guide,* 297-2251-013.

3.10 Call release

There are several methods to release a call handled by the NTDA application from the IWS position.

- Enter the line designator for the desired listing in the Name1 search input field and press the NTDA audio key (NTDA key action 31). This releases the call from the IWS position and requests an audio announcement of the directory number.

- Use an NTDA quick release key that corresponds to the desired listing. This releases the call from the IWS position and requests an audio announcement of the directory number.

- If audio announcement is not possible for the call when a verbal report is required, the operator must verbally quote the desired directory number to the caller, enter the line designator for the desired listing in the Name1 search input field, and then press the IWS generic key set position release key.

- To complete the call to the requested number, first enter the line designator for the desired listing in the Name1 search input field. Change the TOPS service of the call to the toll and assistance service. The requested number displays as the called directory number in the toll and assistance application. Follow the methods defined by the toll and assistance application for outpulsing the call to the called party and for releasing the call from the IWS position. Refer to "TOPS service change" on page 40 for more information on changing the TOPS service of the call. Refer to the toll and assistance application documentation for more information on operator methods for that application.

- Sometimes it is required to complete the call to the requested number without changing the TOPS service of the call. This is usually done in emergency situations. To do this, first enter the line designator for the desired listing in the Name1 search input field. Press the IWS generic key set **Cld** key to context change to the IWS Billing application screen. Follow the methods defined by the IWS Billing application for outpulsing the call to the called party and releasing the call from the IWS position. Refer to *IWS Billing Application User Guide*, 297-2251-016, for more information on operator methods for that application.

When the operator attempts to release a call handled by the NTDA application from the position, but billing for the call is not yet satisfied, the call is not released from the position. The action taken by the NTDA application in this situation is determined by NTDA datafill. The datafill can specify to do one of the following:

- Automatically perform a context change to the IWS Billing application screen so that the required data can be entered to satisfy billing.

- Automatically perform a context change to the IWS Billing application screen so that the required data can be entered to satisfy billing unless the missing billing information is the requested number. In this case, the NTDA service screen remains displayed. The operator can enter the requested number directly from the NTDA service screen by invoking the requested number function from the IWS functions menu. Alternatively, the operator can enter the line designator for the desired listing in the Name1 search input field and press the IWS generic key set requested number key.

- Leave the NTDA service screen displayed and allow the operator to handle the missing billing information as appropriate. In this case the IWS display library displays a message in the IWS MSA in the IWS display library No AMA field to inform the operator that billing is not satisfied. This is the action taken by the default datafill setting. Refer to *TOPS IWS Base HMI Application Guide,* 297-2251-013, for more information on the displays made by the IWS display library.

When a call that has been handled by the NTDA application has been released from the IWS position, the NTDA service screen remains displayed on the screen but all call-related displays are cleared.

3.11 NTDA operator logoff

The logoff procedure from the NTDA database depends on whether the operator logged on for an administrative session or through an IWS position logon.

If the operator has logged on through an IWS position, then logging off is done by invoking function Make Busy and returning to the assigned activities window, which displays a **{Logoff}** softkey. Pressing this softkey takes down the assigned activities window and logs the operator off the IWS position.

When the operator has logged on to an administrative session prior to an IWS position logon, then logging off is done by pressing one of the context change keys (listed in Table 6, "NTDA context change keys," on page 40) to return to the operator administration window. Next the operator can press the **{Quit}** softkey to go to the logo window, or **{Logon}** to log on to the DMS switch.

4.0 Installation

This section directs you to sources of installation information.

4.1 Installation from diskette or CD

Installation of the Nortel Networks Directory Assistance (NTDA) application is described in *TOPS IWS Base Platform User's Guide,* 297-2251-010. Refer to that document for instructions on installing the NTDA software.

4.2 Installation using RAMP software distribution

IWS RAMP (remote access maintenance position) can be used to distribute the NTDA application software and datafill to multiple IWS positions from one central location. NTDA provides software distribution script files for use in RAMP to distribute the NTDA software to other positions. The following list explains these script files as they appear in RAMP and their purpose:

- **(to c:\ramp) NTDA application**: Used from a remote RAMP to transfer all NTDA application software and datafill to a local RAMP for eventual distribution to other positions on the local area network (LAN) using the "NTDA Operator Position" software distribution script file.

- **NTDA operator position**: Used from a RAMP to transfer all NTDA application software and datafill to other positions on its LAN.

For information on using the RAMP to distribute software, refer to *TOPS IWS RAMP and Provisioning User's Guide*, 297-2252-015.

5.0 Configuring NTDA

The NTDA application *WILL NOT* initialize without proper configuration of the language (.LNG), table (.TBL), and initialization (.INI) files. Before you configure the NTDA application, fulfill the requirements for configuring the DMS switch, IWS base, and the DA database. You must also add NTDA to IWS base file MPXINI.INI. NTDA application configuration consists of the following steps:

1. running the NTDA Setup utility

2. configuring NTDA application datafill files

3. configuring IWS base datafill files with NTDA information

5.1 NTDA Setup utility

The NTDA Setup utility is used to configure the position files necessary for proper performance of NTDA. NTDA Setup can be accessed three different ways to configure NTDA software directly on an IWS position.

1. Select the NTDA Setup icon from group TOPS IWS.

2. Select the Provtool icon from group TOPS IWS and select NTDA Setup from the Provtool run menu.

3. From Windows Program Manager, select Run and type C:\IWSNTDA\NTDASETP if on an operator position or operator position/RAMP, or

    C:\RAMP\INSTALL\NTDA\IWSNTDA\NTDASETP if on a RAMP only.

To save configuration changes for an operator position, select "Operator Position" in the NTDA Setup main window. If you plan to distribute the configured datafill to remote positions, select "RAMP" to change the configuration files in the RAMP directory.

For more information on using the keyboard, see *TOPS IWS Base HMI User's Guide*, 297-2251-013.

At any time while running NTDA Setup, you can access online help by pressing the **F1** key. See Figure 16 for the NTDA Setup screen.

The NTDA Setup window has six categories of configurable parameters available from the main screen: Layout Options, Display Options, Database Connection, Font/ASCII Codes, CFN/Hardkeys, and Cursor Position. The next option is to enter the terminal ID of the IWS position, if necessary. (See Figure 16.)
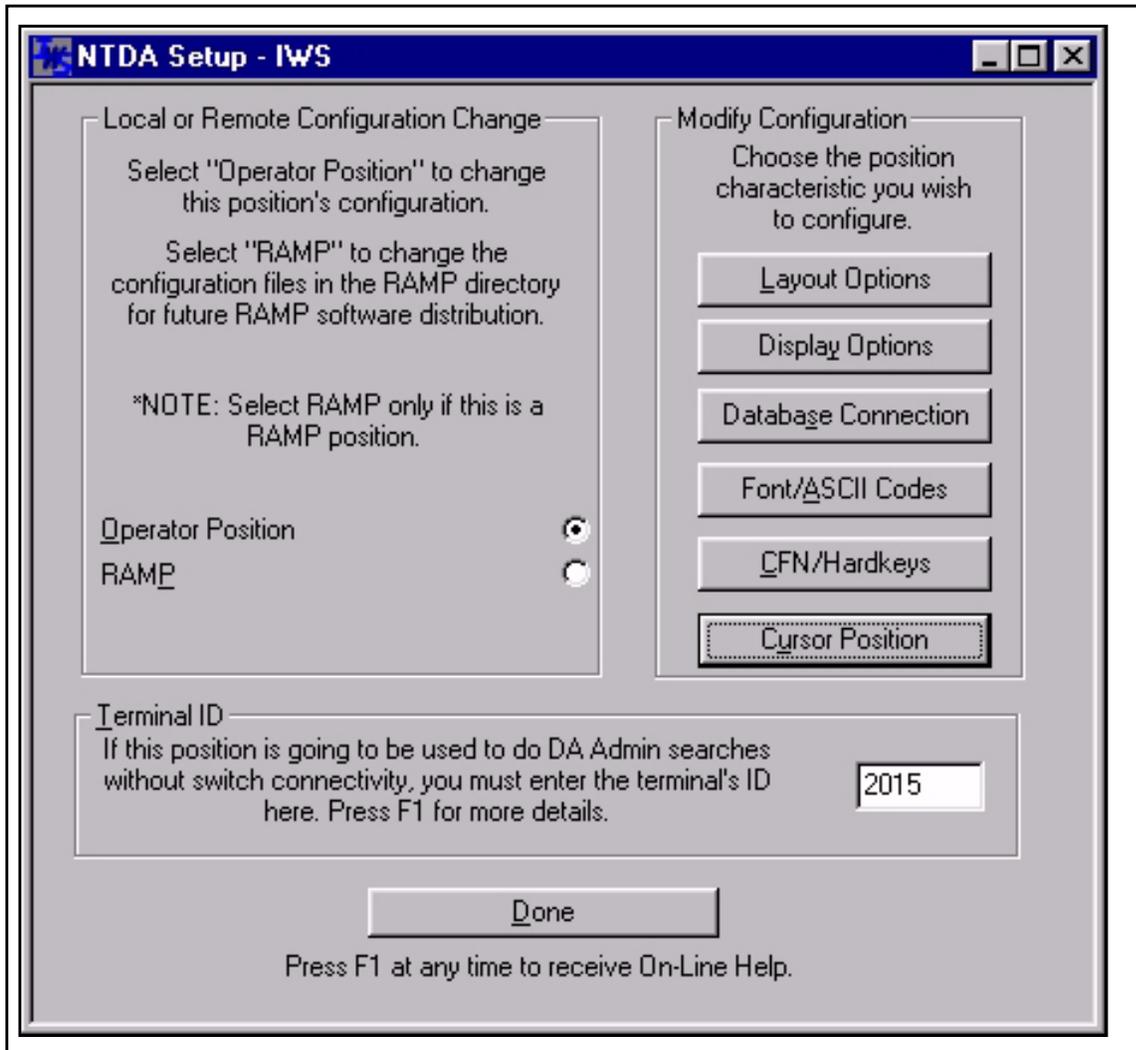
Figure 16. IWS NTDA Setup window

5.1.1 Terminal ID

The terminal ID is the identification number assigned to the IWS position by the DMS switch. In some cases, such as when the IWS position is connected to the DA database before it is connected to the DMS switch, the terminal ID is not automatically assigned. The result of a missing or incorrect terminal ID is the inability to log on for an NTDA database-only administrative session. The solution is to enter the terminal ID manually, using NTDA Setup.

5.1.2 Layout Options window

The Layout Options window provides a means to modify the look of the NTDA service screen. (See Figure 17.) To save the changes, select OK. To avoid saving changes, select Cancel.
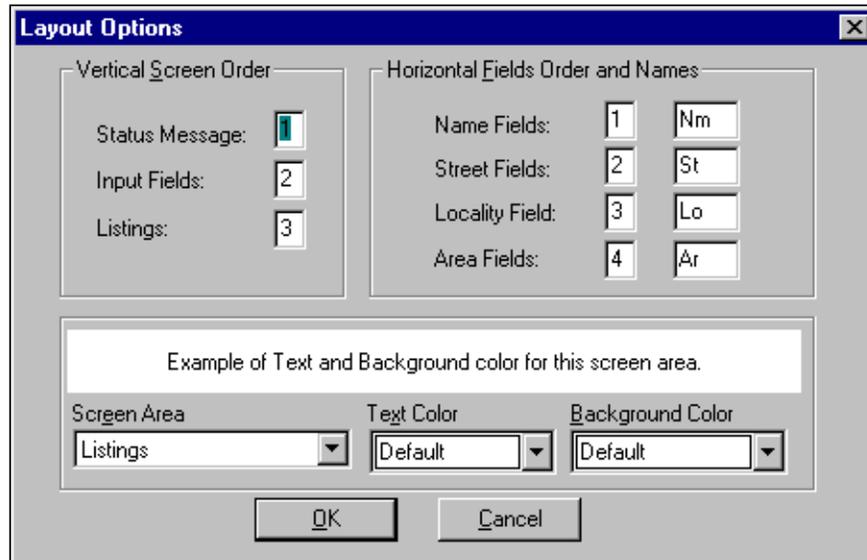
Figure 17. Layout Options window

5.1.2.1 The Vertical Screen Order area

This area defines the vertical order in which the areas of the NTDA service screen appear. (Refer to Figure 5, "NTDA window," on page 18 and Table 1, "NTDA window areas," on page 18.) The three areas are Status Message (call control message area), Input Fields (search input fields), and Listings (error message area, listing area, and search message area). Each area has a number next to it. This number indicates the order in which the area appears on the screen (top = 1, middle = 2, and bottom = 3). The valid range for these fields is 1-3.

5.1.2.2 The Horizontal Fields Order and Names area

This area defines the horizontal order of the search input fields and the labels associated with the search input fields. There are four categories of search input fields: Name Fields, Street Fields, Locality Field, and Area Fields. Each of these categories has a number next to it and a label after the number. The number indicates the order in which the input fields appear and the label defines what text precedes each category. The valid range for these fields is 1-4. The label for each category of input fields is limited to a maximum of two characters.

5.1.2.3 The color selection area

The screen colors can be changed for each of the following areas:

- Listings
- Highlighted Listings
- Call Control Message Area
- Search Input Fields

The default colors are based on the colors provided by the IWS base color selections. A sample of what the screen area will look like with the selected colors is located beneath the selection boxes.

Changing colors can create readability problems with any of these areas due to poor contrast among colors. Observe the following suggestions to improve readability:

- Avoid bright colors in general, and red in particular.
- Use natural colors wherever possible.
- Choose different colors for the active and inactive title bars.
- Choose a color different from the background, or desktop, for both the active and inactive title bars.

Note that the inactive title bar is commonly set to light gray to provide a visual indication that the associated inactive window does not have focus.

5.1.3 The Display Options window

The Display Options window allows you to modify the way the NTDA application behaves. Figure 18 shows the options available. To save changes, select OK. To avoid saving changes, select Cancel.
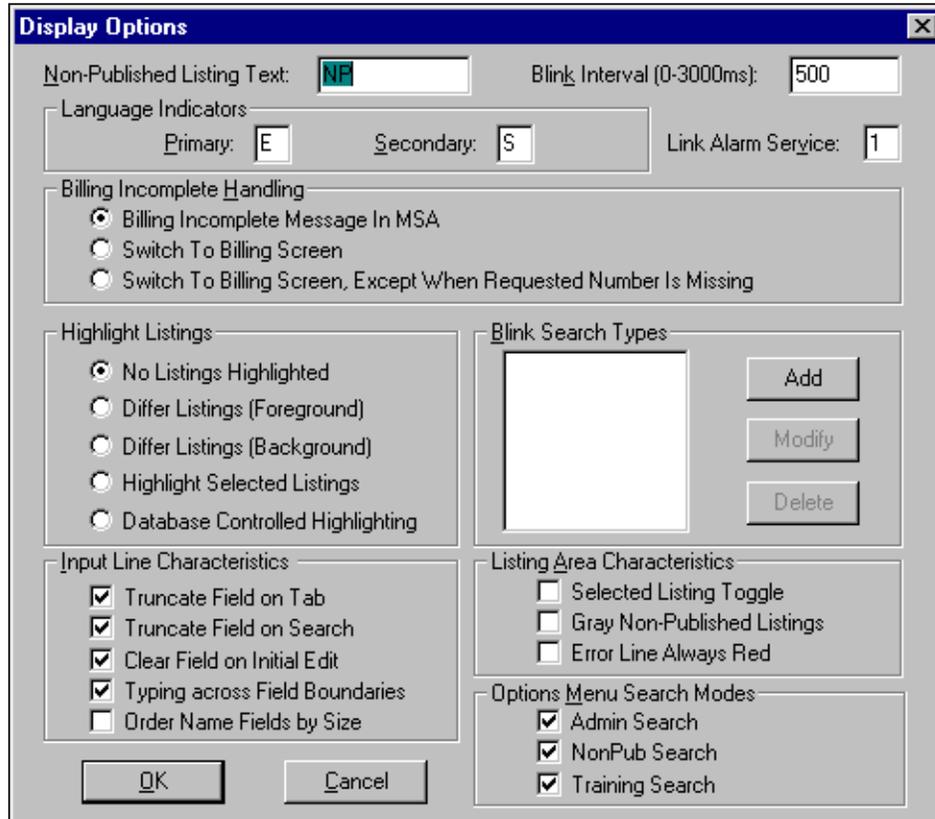
Figure 18. Display Options window

5.1.3.1 Non-Published Listing Text:

The string that displays on the screen instead of a non-published number is datafilled in the database. For the position to determine which listings are non-published, this string must be datafilled on the position as well, and the strings must match between the DA database and position datafill. Enter the string, a maximum of ten characters, that indicates a non-published number into the box provided.

5.1.3.2 Blink Interval (ms):

This option is valid only when used in conjunction with the Blink Search Types option on the display options window. The value specifies how many milliseconds (range 0–3000) a file search indicator appears on the screen before disappearing for an equal amount of time.

5.1.3.3 Primary Language Indicator:

This string indicates the primary language available for audio release. This string can be one character only. Sample choices are E (English), F (French), or S (Spanish).

5.1.3.4 Secondary Language Indicator:

This string indicates the secondary language available for audio release. This string can be one character only. Sample choices are E (English), F (French), or S (Spanish).

5.1.3.5 Link Alarm Service:

To control the generation of link alarms at the DMS switch when the DA database links go out of service, set NTDA parameter Link Alarm Service to a TOPS DA service number. This service number must be datafilled in DMS table TQMSSERV, and should also be assigned to NTDA in IWS file XSERVS.TBL. The link alarm service number must be datafilled on the active gateway position while the active gateway position is running the NTDA application. The simplest way to handle this requirement is to datafill the correct DA service number consistently on all positions.

Once the parameter is set, NTDA will request that the DMS switch generate link alarms whenever a DA database link associated with this DA service changes state and an operator is logged on to this service. To stop DA database link alarms entirely on the DMS switch, use NTDA Setup to set the parameter equal to –1. Note that the default value for the parameter is 1 and must be updated to match the customer configuration.

Refer to *NA DMS-100 Trouble Locating and Clearing Procedures*, 297-8021-5442, for additional information on these alarms.

5.1.3.6 Billing Incomplete Handling

The following choices are available to convey incomplete billing to an operator who attempts to release a call:

- Billing Incomplete Message in MSA–Leave the NTDA service screen displayed and allow the operator to handle the missing billing information as appropriate. In this case the IWS display library displays a message in the IWS MSA in the IWS display library No AMA field to inform the operator that billing is not satisfied. This is the action taken by the default datafill setting. Refer to *TOPS IWS Base HMI Application Guide,* 297-2251-013, for more information on the displays made by the IWS display library.

- Switch to Billing Screen–Automatically perform a context change to the IWS billing application screen so that the required data can be entered to satisfy billing.

- Switch to Billing Screen. Except When Requested Number is Missing–Automatically perform a context change to the billing application screen so that the required data can be entered to satisfy billing unless the missing billing information is the requested number. In this case the NTDA

service screen remains displayed. The operator can enter the requested number directly from the NTDA service screen by invoking the requested number function from the IWS functions menu or by entering the line designator for the desired listing in the Name1 search input field and pressing the IWS generic key set requested number key.

5.1.3.7 The Highlight Listings area

This area contains the following configuration options for using colored lines in the listing area as a visual aid. Note that only one option can be selected at a time.

- No Listings Highlighted—All listings are displayed with the same color text and background.

- Differ Listings (Foreground)—Highlights the text color of alternate listings.

- Differ Listings (Background)—Highlights the background color of alternate listings.

- Highlight Selected Listings—After a search is performed, each line designator that the operator selects causes the associated listing to be highlighted. You can choose the Selected Listing Toggle option x (section 5.1.3.10.1 on page 67) on the display options window to work with this setting.

- Database Controlled Highlighting—Allows the database to highlight specific types of listings. Only Directory One databases with a release level greater than 1.03 support this feature.

5.1.3.8 Blink Search Types area

The labels that indicate what searches are performed are called search type indicators. The search type indicators are displayed in the search indicator field. Certain search type indicators (for example, RES X and GOV) can be emphasized by blinking. Select Add to display the dialog box that allows the addition of a new search type indicator. You can add up to eight indicators. The indicator can be up to ten characters.

An asterisk (*) added as the last character of a search type indicator acts as a wild card. For example, for all GOV searches to blink with or without a secondary search parameter, add the search type indicator "GOV*." The result is that GOV, GOV X, and any other applicable secondary search paramters will blink.

You can modify or delete previously added search type indicators. Find the appropriate search type indicator by using the up and down arrow keys and then choose Modify or Delete in the blink search types area (see Figure 18). Figure 19 shows the Modify popup window.
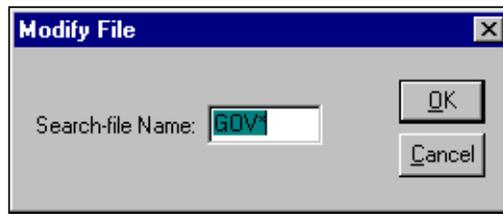
Figure 19. Modify File dialog box

5.1.3.9 Input Line Characteristics

The following options allow you to set up various input line characteristics.

5.1.3.9.1 Truncate Field on Tab

Selecting this option causes the current search input field to be truncated at the current cursor position when any key is pressed that causes the cursor to move to a different field. The input field is truncated only when the data in the field has been edited from its initial input.

5.1.3.9.2 Truncate Field on Search

Selecting this option causes the current search input field to be truncated at the current cursor position when a search is performed. The input field is truncated only when the data in the field has been edited from its initial input.

5.1.3.9.3 Clear Field on Initial Edit

Selecting this option causes the first character typed into a search input field to clear the remainder of that search input field.

5.1.3.9.4 Typing Across Field Boundaries

Selecting this option allows the operator to type from one search input field to the next without explicitly changing fields. When the last character is typed into one search input field, the cursor is automatically placed in the first position in the next search input field. If this option is not selected then when the end of the search input field has been reached, an error sound is generated.

5.1.3.9.5 Order Name Fields by Size

Selecting this option orders the name fields by size when performing a residential search. For example, if the input in the Name1 search input field is longer than the input in the Name2 search input field, the Name1 search input field will be designated the surname.

5.1.3.10 Listing Area Characteristics

The following options allow you to set up various listing area characteristics.

5.1.3.10.1 Selected Listing Toggle

When you have selected Highlight Selected Listings (see the section entitled "Highlight Selected Listings" on page 65), this option causes the NTDA application to treat selected, duplicate line designators as a toggle. That is, when the line designator is selected the first time, the line designator is entered into the Name1 search input field and the listing is highlighted. When this line designator is entered a second time, the original line designator is removed from the Name1 search input field and the listing is no longer highlighted.

5.1.3.10.2 Gray Non-Published Listings

This option causes all non-published listings to be displayed in gray text. For this option to work, the non-published listing text (see "Non-Published Listing Text:" on page 63) must match that of the non-published string datafilled in the DA database.

Note: Do not use this option with any highlighting options.

5.1.3.10.3 Error Line Always Red

This option causes the text in the error message area to be displayed in red, regardless of the highlighting option and color schemes selected.

5.1.3.11 Options Menu Search Modes

Check the boxes of the searches you wish to display on the NTDA options menu. The searches offered are: admin, nonpub, and training.

5.1.4 The Database Connection Configuration window

The Database Connection Configuration window options define how the NTDA application accesses the database. (See Figure 20.) Select the Database Connection Configuration option from the NTDA Setup window.
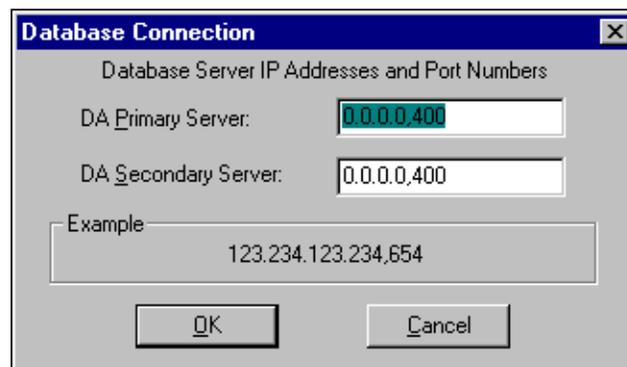
Figure 20. Database Connections Configuration window

Select the DA Primary Server: field and fill in the primary service address using the format shown here:

a.b.c.d,X

The numbers preceding the comma are the IP address of the database (for example, 52.108.195.5), and the numbers following the comma are the TCP port numbers (for example, 400). Be especially careful to separate each number in the field with a period (.) except the last number, which must be separated with a comma (,).

Note: The TCP port number is specified by the DA database.

Direct connect is the only protocol connection type supported. This value, always "3", is datafilled in file MPXTOP.INI.

To save changes, select OK. To avoid saving changes, select Cancel.

5.1.5 The Font/ASCII Codes window

The font and extra ASCII codes window contains a drop-down menu for font selection, an extra ASCII codes entry field, and a check box for enabling extended characters. (See Figure 21.)
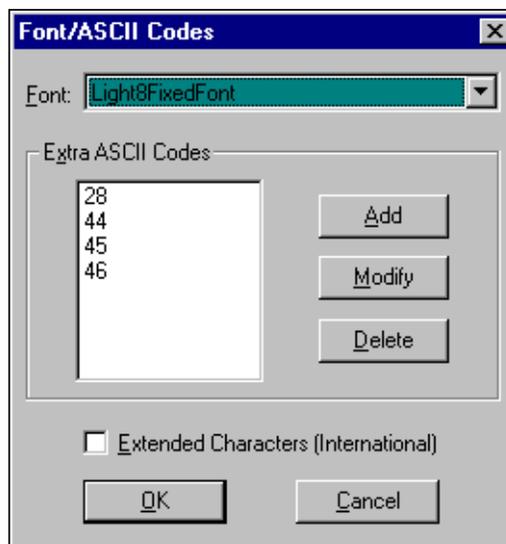
Figure 21. Font/ASCII Codes window

5.1.5.1 Font field

The fonts shown in the following table are recommended for readability in the listing area.

Select the preferred font from the list in the Font field. To save the font change, select OK. To avoid saving the change, select Cancel. After changing a font, you must reboot the position for the font change to take effect.

Table 11: IWS fonts available for NTDA

Font name	Font identifier	Font type	Comment	Screen resolution
Nortel Networks light 8 fixed	Light8FixedFont	Raster (bitmap)	ISO Latin 1 compliant	640 x 480
Nortel Networks bold 8 fixed	Bold8FixedFont	Raster (bitmap)	ISO Latin 1 compliant	640 x 480
Nortel Networks short bold 8 fixed	ShortBold8FixedFont	Raster (bitmap)	ISO Latin 1 compliant	640 x 480
Nortel Networks short light 8 fixed	ShortLight8FixedFont	Raster (bitmap)	ISO Latin 1 complaint	640 x 480
Windows fixed system	Fixedsys	Raster (bitmap)	ISO Latin 1 compliant	640 x 480
Windows Courier	Courier	Raster (bitmap)	ISO Latin 1 compliant	640 x 480
Windows Terminal	Terminal	Raster (bitmap)	ISO Latin 1 compliant	640 x 480
Nortel Networks bold 10 fixed	Bold10FixedFont	Raster (bitmap)	ISO Latin 1 compliant	800 x 600
Nortel Networks light 10 fixed	Light10FixedFont	Raster (bitmap)	ISO Latin 1 compliant	800 x 600
Windows Courier New	Courier New	TrueType	ISO Latin 1 compliant	800 x 600
Windows Terminal	Terminal	Raster (bitmap)	ISO Latin 1 compliant	800 x 600

As of IWS 17.1, the default font is Nortel Networks light 10 fixed for 800 x 600 screen resolution. Prior to this, the default font was Nortel Networks bold 8 fixed. The Nortel Networks bold 8 fixed font and the Windows fixed system font (the previous default NTDA font) closely resemble each other, but the zero character in the Nortel Networks bold 8 fixed font is more readable to most users.

The Nortel Networks short bold 8 fixed and the Nortel Networks short light 8 fixed fonts are short, to provide extra space between the listings. Languages that use accented capital letters may be easier to read when displayed in one of these short fonts. These fonts are only needed for 640 x 480 screen resolution.

Refer to *TOPS IWS Base Platform User's Guide*, 297-2251-010, for charts that depict the character sets in these fonts.

5.1.5.2 Extra ASCII codes area

This area allows the entry into the search input fields of ASCII codes that are outside the normal alphanumeric range. The extra ASCII codes are applicable only if the international option (discussed in the next section) is not set.

Select Add to display the dialog box that allows the addition of an extra ASCII code. You can add up to eight codes. The ASCII code associated with the character can be between 1 and 127. See "Appendix: ASCII codes" on page 105 for a table of ASCII codes and their associated characters.

You can modify or delete previously added extra ASCII codes. Find the appropriate code by using the up and down arrow keys and then choose Modify or Delete in the extra ASCII codes area (see Figure 18). Figure 22 shows the Modify Code popup window.
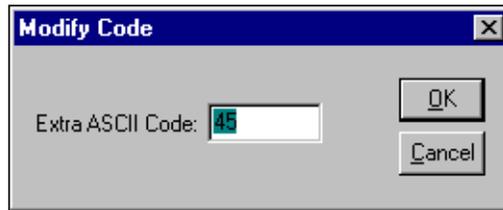
Figure 22. Modify Code dialog box

Default datafill for the extra ASCII codes includes the ASCII codes for the period (46), the dash (45), the comma (44), and the field separator (28).

5.1.5.3 Extended Characters (International) area

This option allows entry into the NTDA search input fields of all characters in the ISO Latin I character set. If this option is not selected, only alphanumeric ASCII characters and any characters entered in the extra ASCII codes area can be entered into the search input fields.

5.1.6 The CFN/Hardkey Configuration window

The common finding names and hardkey configuration window contains the elements described in the following sections. (See Figure 23.) To save changes, select OK. To avoid saving changes, select Cancel.
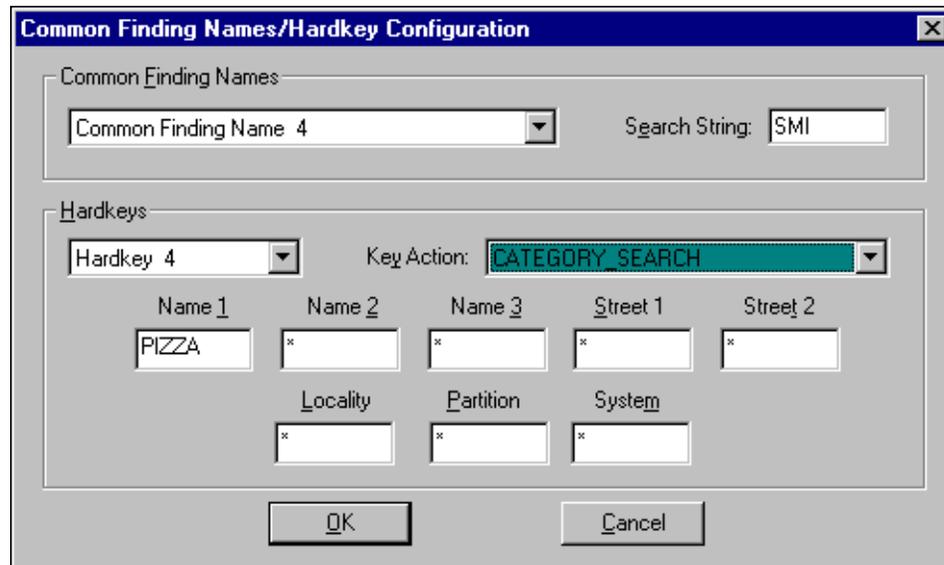
Figure 23. Common Finding Names/Hardkey Configuration window

5.1.6.1 Common Finding Names

Common Finding Names key actions allow the user to map frequently used search strings to a single key press. This defines what string will be input in the current search input field when you press the associated CFN key. For each of the 32 Common Finding Names available, a specific string can be datafilled.

CFN key actions are mapped to specific keys using KeyBind, which is discussed in *TOPS IWS RAMP and Provisioning User's Guide,* 297-2251-015. Refer to "XKBOARD.TBL" on page 83 for more information on NTDA application keyboard datafill.

5.1.6.2 Hardkeys

The hardkey datafill in NTDA Setup defines what strings will be input to each of the eight search input fields when you press a key mapped to a specific hardkey. When you press that key, each of the eight strings is placed in its designated search input field. If you datafill a field with an asterisk (*), that field will be left as it was before the key was pressed. If you leave a field blank, the information in that field will clear when you press the key. When all the input fields are filled in, NTDA performs the action described in the "Key Action" field.

Primary (that is, initial) search key actions are supported in addition to "NO_FUNCTION" and "DA_PRINT_SCREEN." Secondary search key actions are not supported, because they are not applicable to DA hardkeys. The following triggers can be assigned to hardkeys:

- BUSINESS_MEMBER_SEARCH
- BUSINESS_SEARCH
- CATEGORY_SEARCH
- CNA_SEARCH

- GOVERNMENT_SEARCH
- NO_FUNCTION
- PHONETIC_SEARCH
- RESIDENTIAL_SEARCH
- SPECIAL_BUSINESS_SEARCH
- STREET_SEARCH

Once you have assigned a key action to a hardkey, you can map the hardkey to a specific key using KeyBind, which is discussed in *TOPS IWS RAMP and Provisioning User's Guide,* 297-2251-015. Refer to "XKBOARD.TBL" on page 83 for more information on NTDA application keyboard datafill.

5.1.7 The Cursor Position window

The Cursor Position window, shown in Figure 24, provides options for choosing the default location of the cursor at call arrival and for choosing whether to position the cursor in the Name field automatically when a softkey is used to datafill the Locality field.
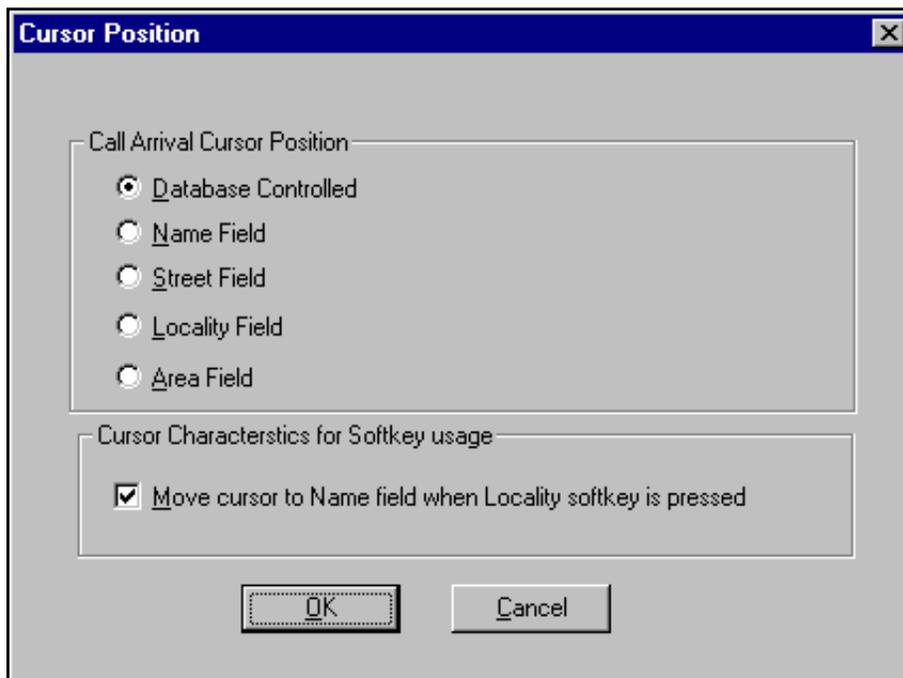
Figure 24. Cursor Position window

5.1.7.1 Call Arrival Cursor Position area

By default, the Directory1 system controls the location of the cursor on the NTDA screen at call arrival, and it globally defaults the cursor to either the Locality or the Name field for all users of the system. Not all users necessarily benefit, however, from having the cursor in the same position at call arrival. For example, operator teams in one geographic area

may find it more efficient to have the cursor default to the Name field, but teams in another area may need it to default to the Locality field.

The Call Arrival Cursor Position option allows an individual IWS position to override the global default cursor location with a new default specific to the position. At the IWS position, the cursor can be datafilled to default to any of the fields Name, Street, Locality, or Area. If none of these options is selected, the database-controlled default applies.

5.1.7.2 Cursor Characteristics for Softkey Usage area

The Cursor Location window also provides an option to move the cursor to the Name field when the Locality softkey is pressed. With this option selected, the cursor automatically goes to the Name field when a softkey is used to datafill the Locality and Area fields. Even when the operator is typing data into other fields such as Name or Street, pressing a softkey sends the cursor back to the Name field.

5.2 NTDA language data files

Language data files are provided for the NTDA application displays and contain values for window titles, field labels, and call related displays. The file extension for language files is .LNG.

The language files required by the NTDA application are shown in Table 12.

Table 12: Language files required by NTDA

Language files
NTDAMSA.LNG
NTDAMISC.LNG

Each language data file contains text strings, which are assigned to specific string IDs. The content of each string can be changed, but the string cannot be deleted and the string must not exceed its maximum length. If the quoted text string is longer than the allowed field length, the string is truncated. This is not considered an error condition, so no indication of the truncation is given.

The default language in the data files provided with the NTDA application is English text. The content may be changed to reflect any desired language supported by the ANSI character set.

String lengths of datafill lines should not exceed 80 characters. Use the provisioning tool to datafill language files. See *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015, for instructions on datafilling language files. After changing datafill you must restart the position for the changes to take effect.

5.2.1 NTDAMSA.LNG

File NTDAMSA.LNG contains string identifiers and English language text to display in the IWS message/status area (MSA) and the NTDA application login window. String lengths are noted for each parameter.

The following table shows the range of values of the fields belonging to file NTDAMSA.LNG.

Table 13: NTDAMSA.LNG fields

Field name	Range of values	Sample values
string ID	4 digits	0026
text string	max characters varies from field to field (specified in the provisioning tool displays)	Operator ID

string ID: This field contains a value that identifies a text string.

text string: This field contains text for window titles, field labels and field entries.

5.2.2 NTDAMISC.LNG

File NTDAMISC.LNG contains string identifiers and English language text to display in the options menu window, statistics window, and the search indicator field. String lengths are noted for each parameter.

The following table shows the range of values of the fields belonging to file NTDAMISC.LNG.

Table 14: NTDAMISC.LNG fields

Field name	Range of values	Sample values
string ID	4 digits	0021
text string	max characters varies from field to field (specified in the provisioning tool displays)	Repeat

   string ID: This field contains a value that identifies a text string.

   text string: This field contains text for window titles, field labels and field entries.

5.3 NTDA table data files

The table files listed in Table 15 are provided by the NTDA application for IWS standard scripting, but Nortel Networks strongly recommends that IWS enhanced scripting be used instead of standard scripting. Enhanced scripting implements the Dynamic Scripting feature which provides much more functionality when compared to standard scripting. Enhanced scripting does not use the table files listed in Table 15. It instead uses a single generic scripting cross reference file which is easier to datafill. Standard scripting is only supported to provide backwards compatibility with pre-IWS17 NTDA scripting datafill, i.e. to provide support for the table files listed in Table 15. For detailed information on using and configuring enhanced scripting, see the Scripting section of the *TOPS IWS Base HMI Application Guide,* 297-2251-013.

Table 15: Table files provided by the NTDA application

Table file	Description
NTDACORG.TBL	NTDA scripting cross reference file for call origination type
NTDACT4Q.TBL	NTDA scripting cross reference file for CT4Q
NTDASPID.TBL	NTDA scripting cross reference file for SPID

String lengths of datafill lines should not exceed 80 characters. The IWS provisioning tool can be used to datafill these files. See *TOPS IWS RAMP and Provisioning User's Guide,* 297-2251-015, for instructions on datafilling table files.

5.3.1 NTDACORG.TBL

File NTDACORG.TBL cross references call origination types with the script message IDs from IWS base file SCRPTSCR.SCR.

The following table shows the range of values of the fields belonging to file NTDACORG.TBL.

Table 16: NTDACORG.TBL fields

Field name	Range of values	Sample values
switch ID	0-31 decimal	2
call origination type	0-100 decimal	24
script ID	1-300 decimal	85

switch ID: This field contains an integer value to identify a switch that would be routing a call to this position.

call origination type: This field contains an integer value corresponding to a call origination type. The call origination type must match those datafilled in IWS base table XCLLORIG.TBL, which is described in *TOPS IWS Base Platform User's Guide,* 297-2251-010.

script ID: This field contains an integer value that identifies the script message to be displayed for the associated call origination type and switch ID. The script ID in this field corresponds to those from IWS base file SCRPTSCR.SCR, which is described in *TOPS IWS Base Platform User's Guide,* 297-2251-010.

5.3.2 NTDACT4Q.TBL

File NTDACT4Q.TBL cross references CT4Qs with the script message IDs from IWS base file SCRPTSCR.SCR.

The following table shows the range of values of the fields belonging to file NTDACT4Q.TBL.

Table 17: NTDACT4Q.TBL fields

Field name	Range of values	Sample values
CT4Q index	0-2046 decimal	14
script ID	1-300 decimal	85

CT4Q index: This field contains an integer value corresponding to a CT4Q. The CT4Q index must match those datafilled in IWS base table XCT4Q.TBL, which is described in *TOPS IWS Base Platform User's Guide,* 297-2251-010.

script ID: This field contains an integer value that identifies the script message to be displayed for the associated CT4Q. The script ID in this field corresponds to those from IWS base file SCRPTSCR.SCR, which is described in *TOPS IWS Base Platform User's Guide,* 297-2251-010.

5.3.3 NTDASPID.TBL

File NTDASPID.TBL cross references SPIDs with the script message IDs from IWS base file SCRPTSCR.SCR.

The following table shows the range of values of the fields belonging to file NTDASPID.TBL.

Table 18: NTDASPID.TBL fields

Field name	Range of values	Sample values
SPID index	0-249 decimal	2
SPID	up to 6 ASCII char	NEWP
script ID	1-300 decimal	85

SPID index: This field contains an integer value that acts as an index for the entries in this table.

SPID: This field contains a normal ASCII text string to identify the SPID received from the DMS. These entries must correspond to the SPIDs datafilled in the DMS table SPID. The text must be enclosed by double quotes.

script ID: This field contains an integer value that identifies the script message to be displayed for the associated SPID. The script ID in this field corresponds to those from IWS base file SCRPTSCR.SCR, which is described in *TOPS IWS Base Platform User's Guide,* 297-2251-010.

5.4 NTDA initialization files

Windows initialization files provide a standard format for Windows applications to access their initialization data. Initialization files allow comment lines that begin with a semicolon. Initialization files are composed of sections and sections are composed of entries. An entry can have an integer value or a string value. The basic form of the file is:

> ;Comment
> [section name]
> entry=value

The following initialization files are provided by the NTDA application.

Table 19: Table files provided by the NTDA application

Initialization file	Description
NTDAINI.INI	General data required for the NTDA application.
UMP.INI	Data required by NTDA for UMP related information

5.4.1 NTDAINI.INI

File NTDAINI.INI is datafilled to define various parameters used by the NTDA application. Use the NTDA Setup utility to datafill most of the parameters in file NTDAINI.INI. See "NTDA Setup utility" on page 55, for information on using NTDA Setup and descriptions of the NTDAINI.INI parameters that are datafilled in that utility.

The following parameters are not configured in the NTDA Setup utility. These parameters must be configured manually by editing the file with any text editor. Any parameters that are not configured in the NTDA Setup utility and that are not described here are not intended to be configured by the customer.

5.4.1.1 NTDA options menu window softkey labels

There are two softkeys in the NTDA options menu window, softkey 4 and softkey 5. The labels for the softkeys in the NTDA options menu window are configurable. Refer to Figure 11, "NTDA options menu window," on page 31 to see the layout of the softkey labels. The parameters are listed under the "softkeys" section. The following is the layout for the NTDA options menu window softkey labels parameters:

```
SoftkeyOption12=DIFFER_COLOR, <text>

SoftkeyOption4=DIFFER_COLOR, <text>

SoftkeyOption13=OPR_VIEW_STATS, <text>

SoftkeyOption5=OPR_VIEW_STATS, <text>
```

The parameters must appear as seen here with the <text> portion replaced by an alphanumeric string of up to seven characters. This string must be enclosed in double quotes. SoftkeyOption4 and SoftkeyOption12 are the top and bottom softkey labels for softkey number 4, the **{Select Hilight}** softkey. SoftkeyOption5 and SoftkeyOption13 are the top and bottom softkey labels for softkey number 5, the **{View Stats}** softkey. Refer to

sections "{Select Hilight} softkey" on page 32 and "{View Stats} softkey" on page 33 for more information on those softkeys.

The following is the default configuration for the NTDA options menu window softkey labels:

```
SoftkeyOption12=DIFFER_COLOR, "Hilight"
SoftkeyOption4=DIFFER_COLOR, "Select",""
SoftkeyOption13=OPR_VIEW_STATS, "Stats"
SoftkeyOption5=OPR_VIEW_STATS, "View"
```

5.4.2 UMP.INI

File UMP.INI is used by the NTDA application to remap selected characters. The parameters in file UMP.INI are not configured in the NTDA Setup utility. These parameters must be configured manually by editing the file with any text editor.

The only parameters in the UMP.INI file are under section "Char_Maps." The entries in this section are used to map a character in the UMP protocol information from the DA database to a different character that is used for display in the fields of the NTDA service screen. These parameters allow display of the characters that are not valid in the UMP protocol. The default configuration for these parameters remains commented out so that no remapping of characters is done. Up to ten mappings are supported; therefore, up to ten entries can be added to the section. The format of the entries is:

```
MapN=x,y
```

In this format N is a number from 0 to 9, x is the character from the DA database information, and y is the character that will replace the x character for display in the NTDA service screen. Following is an example of the parameter datafill:

```
[Char_Maps]
Map0=@,~
Map1=$,^
```

5.5 IWS base table data files

The following tables provided by the IWS base are required by NTDA, but do not require configuration specifically for NTDA. Each table is described in *TOPS IWS Base Platform User's Guide*, 297-2251-010.

Table 20: Table files provided by the IWS base

Table file	Description
XCASTS.TBL	call arrival status
XCLLORIG.TBL	call origination
XCT4Q.TBL	call type for queuing
XTGDSPL.TBL	trunk group display

The following tables provided by the IWS base must be configured specifically for the NTDA application. Each table is described in *TOPS IWS Base Platform User's Guide,*

297-2251-010. String lengths of datafill lines should not exceed 80 characters. Use the provisioning tool to datafill all files except XKBOARD.TBL, which is configured with the IWS base KeyBind utility. See *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015, for instructions on using the provisioning tool and KeyBind.

Table 21: Files provided by the IWS Base that must be configured for NTDA

Table File	Description
XSERVS.TBL	TOPS service number mapped to the providing application
XAPPL.TBL	applications that can be accessed from the IWS applications menu
XKBOARD.TBL	keyboard mapping

5.5.1 XSERVS.TBL

File XSERVS.TBL contains the TOPS service numbers mapped to the IWS applications that provide the services. For the IWS base application to know about the services that NTDA provides, file XSERVS.TBL must be modified. When the Queue Management System (QMS) is in use, the TOPS services listed in this file must refer to the same TOPS services datafilled in DMS table TQMSSERV. Use the provisioning tool, described in *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015, to datafill file XSERVS.TBL. The following figure provides an example of the datafill that might be used to provision file XSERVS.TBL.
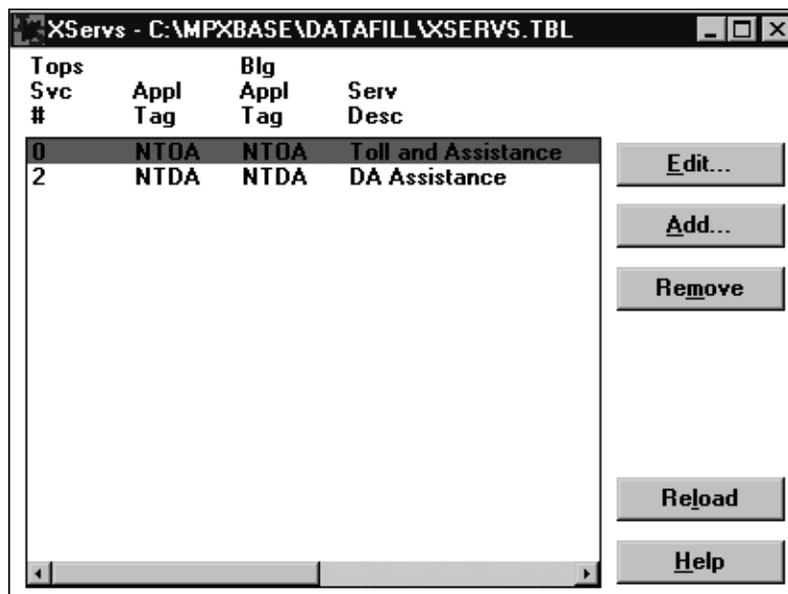
Figure 25. Sample XERVS.TBL datafill in provisioning tool

The following table shows the range of values of the fields belonging to file XSERVS.TBL. The table is followed by a description of each field.

Table 22: XSERVS.TBL fields

Field name	Range of values	Sample values
TOPS Svc #	0-62	1
Appl Tag	up to 8 ASCII char	NTDA
Blg Appl Tag	up to 8 ASCII char	NTOA
Serv Desc	up to 19 ASCII char	DA
Service type text	up to 6 char	DA
Restricted billing table	0,1,2	1

TOPS Svc #: The number of the application, or service. With the QMS call queuing system in the DMS, the service numbers in this file MUST match the service numbers in the corresponding DMS table, TQMSSERV. These numbers must be between 0 and 62.

Appl Tag: The application tag is a text string that identifies the position executable that provides the application. This field MUST EXACTLY match the tag documented by the application.

Blg Appl Tag: The billing application tag is a text string that identifies the position application providing the billing functions for the TOPS service. This field MUST EXACTLY match the tag documented by the application that provides the billing screen for this service.

Note: As of IWS release 13.0, the NTOA/NTOA Plus application is renamed the IWS Billing application. Continue to enter NTOA as the billing application tag in table XSERVS.

Serv Desc: The service description is a text string that provides the name of the service.

Serv Type Text: The service type text is a string that can be displayed by applications at call arrival to identify the TOPS service of the new call.

Rest Bill Tbl: The number that identifies which restricted billing table to use for display of restricted billing information.

> 0 - No restricted billing table
> 1 - Toll restricted billing table
> 2 - DA restricted billing table

5.5.2 XAPPL.TBL

File XAPPL.TBL lists the applications that can be accessed without the DMS switch to a value that represents that application index on the IWS applications menu. For the IWS base application to know about the NTDA application listed in the IWS applications menu, file XAPPL.TBL must be modified. Use the provisioning tool, described in *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015, to datafill this file. The following figure provides an example of the datafill that might be used to provision file XAPPL.TBL.

Figure 26. Sample XAPPL.TBL datafill in provisioning tool

The following table shows the range of values of the fields belonging to file XAPPL.TBL. The table is followed by a description of each field.

Table 23: XAPPL.TBL fields

Field name	Range of values	Sample values
Appl Num	0-31 numeric	1
Appl Desc	up to 19 ASCII char	NTDA
Appl Tag	up to 7 ASCII char	NTDA
Extra Data Indicator	check box	N

Appl Num: The number of the application. Each application entry must have a unique number; therefore, up to 32 applications can be entered into file XAPPL.TBL.

Appl Desc: The application description is a text string that provides the name of the application.

Appl Tag:	The application tag is a text string that identifies the position executable that provides the application. This field MUST EXACTLY match the tag documented by the application.
Extra Data Indicator:	An indication that the operator will be prompted for extra data input when this application is chosen from the menu. Whether this capability should be allowed for an application is specified in the application documentation. Check the "Y" box to prompt for extra data.

5.5.3 XKBOARD.TBL

To configure NTDA key mappings for the first time, append the default key mappings from file NTDAXKB.TBL, which is installed into the c:\iwsntda directory, in file XKBOARD.TBL, to provide a starting point. Next use the IWS base KeyBind utility to configure NTDA key mappings. See *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015, for further information on KeyBind, and *TOPS IWS Base Platform User's Guide*, 297-2251-010, for a description of file XKBOARD.TBL.

5.5.3.1 Appending the default NTDA key mappings to file XKBOARD.TBL

To append the default NTDA key mapping file NTDAXKB.TBL to IWS file XKBOARD.TBL, use the DOS text editor and follow these steps:

1. If the IWS base or RAMP application is running, follow substeps a through d to close the application and obtain the Windows desktop.

   a. Press **Ctrl+Alt+Delete** and select the Task Manager.

   b. Select the Applications Tab if it is not already selected.

   c. Use the down arrow key to highlight MPX BASE Application or Remote Access Maintenance Position.

   d. Use the Tab key to highlight the End Task button and then press the Enter key to end the application. (Close both the IWS base and RAMP applications if both are running.)

2. From the Windows XP Professional desktop, press Ctrl+Esc to open the Start menu.

3. Press the R key to open the Run dialog box.

4. Type cmd to open a window. Press Enter.

5. At the command line, Type CD C:\IWSNTDA. Press Enter.

6. At C\IWSNTDA:>, type EDIT NTDAXKB.TBL.

7. File NTDAXKB.TBL displays.

8. Press and hold the **Shift** key, and page down to the bottom of the file.

9. The entire file is selected.

10. Press **Alt** + **E** to display the edit menu.

11. Press **C** to copy the file.

12. Press **Alt** + **F** to display the file menu.

13. Press **O** to open a file.

14. At the prompt, type C:\MPXBASE\DATAFILL\XKBOARD.TBL and press **Enter**.

15. Use page down (unshifted) to go to the bottom of the file.

16. Press **Alt** + **E** to display the edit menu.

17. Press **P** to append (paste) file NTDAXKB.TBL to file XKBOARD.TBL.

18. Press **Alt** + **F** to display the file menu.

19. Press **S** to save your action.

20. Press **Alt** + **F** to display the file menu.

21. Press **X** to exit the editor.

22. Restart the IWS position to enable the change.

After the Nortel Networks NTDA key mapping file is appended to file XKBOARD.TBL, "NTDA" is listed in the KeyBind tool under the Section menu. Use the GUI provided by KeyBind to datafill the application-specific keys for NTDA. Figure 27 is an example of the KeyBind display with NTDA selected.
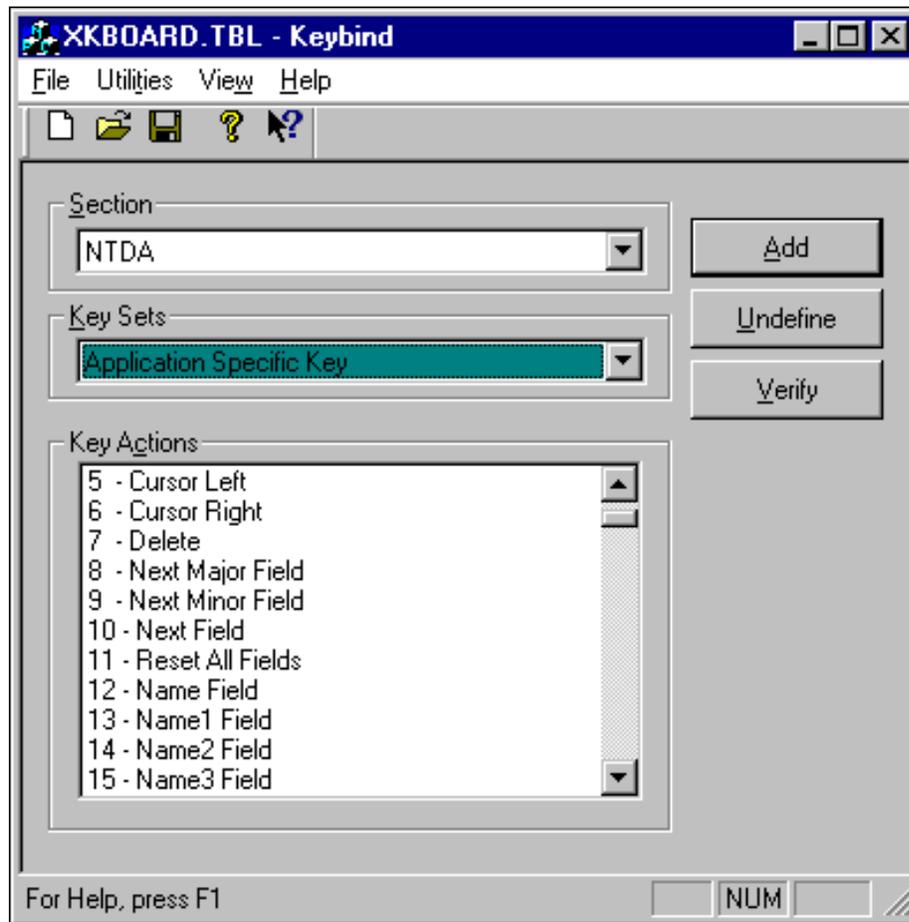
Figure 27. KeyBind window with NTDA

5.5.3.2 Enabling previous search capability

As of IWS 17.1. a patch is available to enable previous search capability. Later releases will automatically include this previous search capability.

To use the Previous Search capability, the IWS keyboard datafill file must be updated to assign the previous search key action and possibly the next search key action to physical keys. The following diagram shows the IWS Keybind tool and the previous and next search key actions.
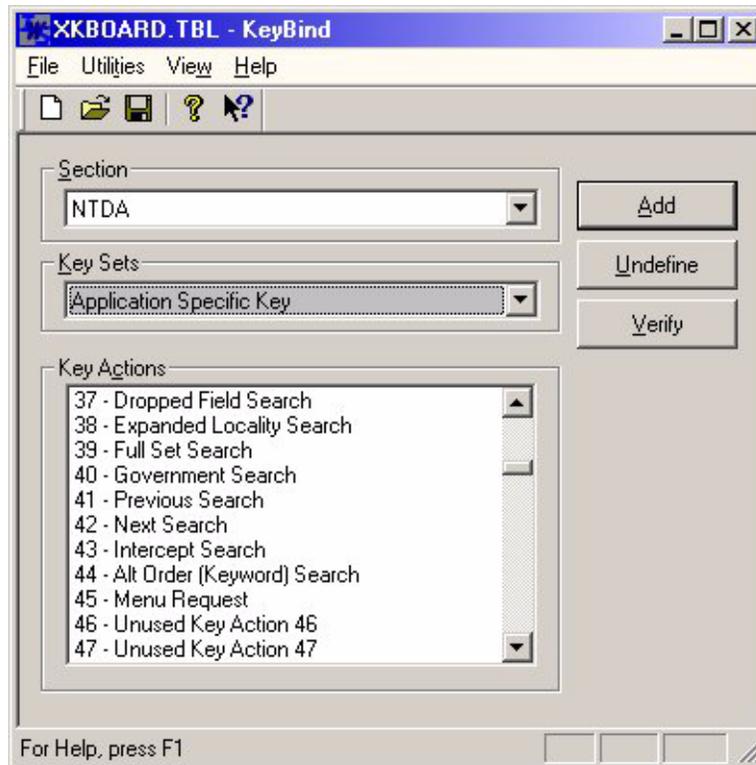
Figure 28. Previous and next search key actions

5.5.3.3 Configured TOPS IWS keyboard and action keys

The following figure is an example of a TOPS IWS keyboard configured with default NTDA datafill.

Figure 29. Example of TOPS IWS keyboard with NTDA default datafill

Loc 8	Loc 9	Loc10	Loc11		Loc12	Loc13	Loc14	Loc15
Loc 0	Loc 1	Loc 2	Loc 3		Loc 4	Loc 5	Loc 6	Loc 7

| Name field | Str field | Loc field | Area field | Res srch | Bus srch | Gov srch | Bus mem srch | Spec bus srch | Key word srch | Full set srch | Exp place srch | Phon srch |

Rel to audio | **Alt lan**

Exit audio mode | **Op-tions**

Clg | **Rls Cld** | **Ca Call** | **App**

| Clear field | CFN 1 | CFN 2 | CFN 3 | CFN 4 | CFN 5 | CFN 6 | CFN 7 | CFN 8 | CFN 9 | CFN 10 | CFN 11 | CFN 12 | X |

DA print scrn

Cld | **Svc**

| Tab | Q | W | E | R | T | Y | U | I | O | P | { [| }] | Context / Restart |

Drop field srch | **Cat srch**

Spl | 1 | 2 abc | 3 def | **Fnct**

| Lock | A | S | D | F | G | H | J | K | L | : ; | " ' | Next major field |

IC | 4 ghi | 5 jkl | 6 mno | **Trbl**

| Shift | Z | X | C | V | B | N | M | < , | > . | ? / | Shift |

Misc | 7 prs | 8 tuv | 9 wxy | **OGT**

| Ctrl | Alt | Next minor field | Alt | Field |

Page Back | **Page Fwrd**

Start | * | 0 | # | **Pos Rls**

The following table provides a list of the key actions available specifically for NTDA. Using this table, you can see the function of each key action associated with the name and number displayed in KeyBind.

Table 24: Key actions for NTDA

Key action	Key action name	Functional description
2	Clear all fields	Clears all input fields and moves cursor to Name1 field.
3	Clear field	Clears the input field in which the cursor is located.
4	Clear name and street fields	Clears all name and street minor fields and moves the cursor to the Name1 field.
5	Cursor left	Moves the cursor one character to the left in the field in which the cursor is located.
6	Cursor right	Moves the cursor one character to the right in the field in which the cursor is located.
7	Delete	Deletes the character underneath the cursor.
8	Next major field	If the cursor is in any Name field, it is moved to the Street1 field. If the cursor is in any Street field, it is moved to the Name1 field.
9	Next minor field	If the cursor is in a Name, Street, or Area field, the cursor is moved to the next minor field within that major field. If the cursor is in the Locality field, a space character is input.
10	Next field	The cursor is moved to the beginning of the next minor field regardless of which major field the cursor is in.
11	Reset all fields	Changes all input field data to what it was when the call came in. Moves the cursor to the Name1 field.
12	Name field	Moves the cursor to the next Name minor field if the cursor is in a Name field. If the cursor is in another major field, moves the cursor to the Name1 field. This key also exits audio mode.
13	Name1 field	Moves the cursor to the beginning of the Name1 field.
14	Name2 field	Moves the cursor to the beginning of the Name2 field.
15	Name3 field	Moves the cursor to the beginning of the Name3 field.
16	Street field	Moves the cursor to the next Street minor field if the cursor is in a Street field. If the cursor is in another major field, moves the cursor to the Street1 field.
17	Street1 field	Moves the cursor to the beginning of the Street1 field.
18	Street2 field	Moves the cursor to the beginning of the Street2 field.

Table 24: Key actions for NTDA (Continued)

Key action	Key action name	Functional description
19	Area field	Moves the cursor to the next Area minor field if the cursor is in an Area field. If the cursor is in another major field, moves the cursor to the Area1field.
20	Area1 field	Moves the cursor to the beginning of the Area1 field.
21	Area2 field	Moves the cursor to the beginning of the Area2 field.
22	Locality field	Moves the cursor to the beginning of the Locality field.
23	Alternate language	Toggles the audio subsystem language selection between the primary and secondary languages.
24	Select Highlight	Toggles the highlighting selection among the different highlighting schemes. This key is only valid when the NTDA options menu window is displayed.
25	Exit audio mode	Removes highlighting from all selected listings and exits audio mode so that any new input in the Name1 field is not interpreted as a line designator, and the listings are not highlighted. This allows the operator to input criteria for another search. This key also clears the Name1, Name2, and Name3 fields as well as Street1 and Street2, and places the cursor at the beginning of the Name1 field.
26	No audio (block audio)	Toggles between preventing the current call from being released to audio and allowing it to be released to audio.
27	View stats	Displays the NTDA statistics window. This key is valid in the NTDA service screen or in the NTDA options menu window.
28	Options menu	Toggles the display of the NTDA options menu window.
30	No function	No action is taken when this key is pressed. This is useful when the key has a default key action defined that NTDA should not act upon and no other key action is desired for the key in NTDA.
31	Release to audio	Requests the database to release the selected listing to audio in the selected ARU language. If audio has been blocked, an error tone is generated.
32	Business member search	Requests the database to perform a business member initial search.
33	Business search	Requests the database to perform a business initial search.

Table 24: Key actions for NTDA (Continued)

Key action	Key action name	Functional description
34	Category search	Requests the database to perform a category initial search.
35	CNA search	Requests the database to perform a Customer Name and Address (CNA) initial search.
36	DA print screen	Sends the screen information to the database for printing.
37	Dropped field search	Requests the database to perform a dropped field subsequent search.
38	Expanded locality search	Requests the database to perform an expanded locality subsequent search.
39	Full set search	Requests the database to perform a full set subsequent search.
40	Government search	Requests the database to perform a government initial search.
41	Previous search	Causes NTDA to recall a previous search and requests the database to perform the previous search.
42	Next search	Causes NTDA to recall a next search and requests the database to perform the next search.
43	Intercept search	Requests the database to perform an intercept initial search.
44	Alternate order (keyword) search	Requests the database to perform an alternate order subsequent search, formerly called keyword search.
45	Menu request	Requests the locality menu from the database.
48	Phonetic search	Requests the database to perform a phonetic subsequent search.
49	Residential search	Requests the database to perform a residential initial search.
50	Restart	Clears the database listing area and exits audio mode.
51	Special (Special business) search	Requests the database to perform a special initial search, formerly called special business search.
52	CFN Key 1	Enters text datafilled for common finding name key 1 into the current field.
53	CFN Key 2	Enters text datafilled for common finding name key 2 into the current field.
54	CFN Key 3	Enters text datafilled for common finding name key 3 into the current field.
55	CFN Key 4	Enters text datafilled for common finding name key 4 into the current field.
56	CFN Key 5	Enters text datafilled for common finding name key 5 into the current field.

Table 24: Key actions for NTDA (Continued)

Key action	Key action name	Functional description
57	CFN Key 6	Enters text datafilled for common finding name key 6 into the current field.
58	CFN Key 7	Enters text datafilled for common finding name key 7 into the current field.
59	CFN Key 8	Enters text datafilled for common finding name key 8 into the current field.
60	CFN Key 9	Enters text datafilled for common finding name key 9 into the current field.
61	CFN Key 10	Enters text datafilled for common finding name key 10 into the current field.
62	CFN Key 11	Enters text datafilled for common finding name key 11 into the current field.
63	CFN Key 12	Enters text datafilled for common finding name key 12 into the current field.
64	CFN Key 13	Enters text datafilled for common finding name key 13 into the current field.
65	CFN Key 14	Enters text datafilled for common finding name key 14 into the current field.
66	CFN Key 15	Enters text datafilled for common finding name key 15 into the current field.
67	CFN Key 16	Enters text datafilled for common finding name key 16 into the current field.
68	CFN Key 17	Enters text datafilled for common finding name key 17 into the current field.
69	CFN Key 18	Enters text datafilled for common finding name key 18 into the current field.
70	CFN Key 19	Enters text datafilled for common finding name key 19 into the current field.
71	CFN Key 20	Enters text datafilled for common finding name key 20 into the current field.
72	CFN Key 21	Enters text datafilled for common finding name key 21 into the current field.
73	CFN Key 22	Enters text datafilled for common finding name key 22 into the current field.
74	CFN Key 23	Enters text datafilled for common finding name key 23 into the current field.
75	CFN Key 24	Enters text datafilled for common finding name key 24 into the current field.
76	CFN Key 25	Enters text datafilled for common finding name key 25 into the current field.
77	CFN Key 26	Enters text datafilled for common finding name key 26 into the current field.
78	CFN Key 27	Enters text datafilled for common finding name key 27 into the current field.
79	CFN Key 28	Enters text datafilled for common finding name key 28 into the current field.

Table 24: Key actions for NTDA (Continued)

Key action	Key action name	Functional description
80	CFN Key 29	Enters text datafilled for common finding name key 29 into the current field.
81	CFN Key 30	Enters text datafilled for common finding name key 30 into the current field.
82	CFN Key 31	Enters text datafilled for common finding name key 31 into the current field.
83	CFN Key 32	Enters text datafilled for common finding name key 32 into the current field.
84	Hardkey 1	Enters text datafilled for hardkey 1 into the input fields.
85	Hardkey 2	Enters text datafilled for hardkey 2 into the input fields.
86	Hardkey 3	Enters text datafilled for hardkey 3 into the input fields.
87	Hardkey 4	Enters text datafilled for hardkey 4 into the input fields.
88	Hardkey 5	Enters text datafilled for hardkey 5 into the input fields.
89	Hardkey 6	Enters text datafilled for hardkey 6 into the input fields.
90	Hardkey 7	Enters text datafilled for hardkey 7 into the input fields.
91	Hardkey 8	Enters text datafilled for hardkey 8 into the input fields.
92	Hardkey 9	Enters text datafilled for hardkey 9 into the input fields.
93	Hardkey 10	Enters text datafilled for hardkey 10 into the input fields.
94	Hardkey 11	Enters text datafilled for hardkey 11 into the input fields.
95	Hardkey 12	Enters text datafilled for hardkey 12 into the input fields.
96	Hardkey 13	Enters text datafilled for hardkey 13 into the input fields.
97	Hardkey 14	Enters text datafilled for hardkey 14 into the input fields.
98	Hardkey 15	Enters text datafilled for hardkey 15 into the input fields.
99	Hardkey 16	Enters text datafilled for hardkey 16 into the input fields.
100	Hardkey 17	Enters text datafilled for hardkey 17 into the input fields.
101	Hardkey 18	Enters text datafilled for hardkey 18 into the input fields.
102	Hardkey 19	Enters text datafilled for hardkey 19 into the input fields.

Table 24: Key actions for NTDA (Continued)

Key action	Key action name	Functional description
103	Hardkey 20	Enters text datafilled for hardkey 20 into the input fields.
104	Hardkey 21	Enters text datafilled for hardkey 21 into the input fields.
105	Hardkey 22	Enters text datafilled for hardkey 22 into the input fields.
106	Hardkey 23	Enters text datafilled for hardkey 23 into the input fields.
107	Hardkey 24	Enters text datafilled for hardkey 24 into the input fields.
108	Hardkey 25	Enters text datafilled for hardkey 25 into the input fields.
109	Hardkey 26	Enters text datafilled for hardkey 26 into the input fields.
110	Hardkey 27	Enters text datafilled for hardkey 27 into the input fields.
111	Hardkey 28	Enters text datafilled for hardkey 28 into the input fields.
112	Hardkey 29	Enters text datafilled for hardkey 29 into the input fields.
113	Hardkey 30	Enters text datafilled for hardkey 30 into the input fields.
114	Hardkey 31	Enters text datafilled for hardkey 31 into the input fields.
115	Hardkey 32	Enters text datafilled for hardkey 32 into the input fields.
116	Quick release A	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
117	Quick release B	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
118	Quick release C	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
119	Quick release D	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
120	Quick release E	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.

Table 24: Key actions for NTDA (Continued)

Key action	Key action name	Functional description
121	Quick release F	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
122	Quick release G	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
123	Quick release H	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
124	Quick release I	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
125	Quick release J	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
126	Quick release K	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
127	Quick release L	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
128	Quick release M	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
129	Quick release N	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
130	Quick release O	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
131	Quick release P	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
132	Quick release Q	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.

Table 24: Key actions for NTDA (Continued)

Key action	Key action name	Functional description
133	Quick release R	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
134	Quick release S	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
135	Quick release T	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
136	Quick release U	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
137	Quick release V	Requests the database to release an associated special announcement to audio in the selected language. If audio has been blocked, an error tone is generated.
138	Extended quick release W	Requests the database to release an associated special announcement to audio in the selected language. If audio has been blocked, an error tone is generated.
139	Extended quick release X	Requests the database to release an associated special announcement to audio in the selected language. If audio has been blocked, an error tone is generated.
140	Extended quick release Y	Requests the database to release an associated special announcement to audio in the selected language. If audio has been blocked, an error tone is generated.
141	Extended quick release Z	Requests the database to release an associated special announcement to audio in the selected language. If audio has been blocked, an error tone is generated.
143	Quick release ß	Requests the database to release the associated listing to audio in the selected ARU language. If audio has been blocked, an error tone is generated.
144	Quick release à	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
145	Quick release á	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.

Table 24: Key actions for NTDA (Continued)

Key action	Key action name	Functional description
146	Quick release â	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
147	Quick release ã	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
148	Quick release ä	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
149	Quick release å	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
150	Quick release æ	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
151	Quick release ç	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
152	Quick release è	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
153	Quick release é	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
154	Quick release ê	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
155	Quick release ë	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
156	Quick release ì	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
157	Quick release í	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.

Table 24: Key actions for NTDA (Continued)

Key action	Key action name	Functional description
158	Quick release î	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
159	Quick release ï	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
160	Quick release ǒ	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
161	Quick release ñ	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
162	Quick release ò	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
163	Quick release ó	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
164	Quick release ô	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
165	Quick release õ	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
166	Quick release ö	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
167	Quick release ø	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
168	Quick release ù	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
169	Quick release ú	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.

Table 24: Key actions for NTDA (Continued)

Key action	Key action name	Functional description
170	Quick release û	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
171	Quick release ü	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
172	Quick release ý	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
173	Quick release þ	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
174	Quick release ÿ	Requests the database to release the associated listing to audio in the selected language. If audio has been blocked, an error tone is generated.
175	Street search	Requests the database to perform a street initial search.
176	Locality to Name1	Copies the text in the Lo (location) field to the Name1 field (especially useful for Gov and Bus searches).
177	Release to SMS	Requests the database to release a short message to the caller.

Note: Not all key actions shown in this table are supported by all Nortel Networks D&OS databases. Consult the documentation for your database to see which key actions are supported.

The hardkeys just listed can be assigned key actions by using NTDA Setup. See "Hardkeys" on page 71 for a description of the key actions that can be assigned to hardkeys.

In addition, many of the key actions defined in the IWS generic key set can be used by NTDA. The following table provides a list of these key actions. Not all databases require all the key actions listed here.

Table 25: IWS generic key actions for use by NTDA

Key action	Key action name
0	Keypad 0
1	Keypad 1
2	Keypad 2
3	Keypad 3
4	Keypad 4

Table 25: IWS generic key actions for use by NTDA (Continued)

Key action	Key action name
5	Keypad 5
6	Keypad 6
7	Keypad 7
8	Keypad 8
9	Keypad 9
10	Destructive backspace
12	Start
13	Misc field
14	InterLATA carrier field
15	Special field
16	Called field
17	Calling field
20	Release called
21	Cancel call
22	Applications menu
23	Services menu
24	Functions menu
25	Trouble menu
26	OGT menu
27	Position release
28	Page backward
29	Page forward
30	Half page backward
31	Half page forward
33	Increase headset volume
34	Decrease headset volume
39	Mute on
40	Mute off
41	Context change
45	CT4Q menu
52	Requested number
70	Generate AMA
76	Softkey number zero
77	Softkey number one
78	Softkey number two
79	Softkey number three
80	Softkey number four
81	Softkey number five

Table 25: IWS generic key actions for use by NTDA (Continued)

Key action	Key action name
82	Softkey number six
83	Softkey number seven
84	Softkey number eight
85	Softkey number nine
86	Softkey number ten
87	Softkey number eleven
88	Softkey number twelve
89	Softkey number thirteen
90	Softkey number fourteen
91	Softkey number fifteen
152	Account field
157	Display scripting window
162	Screen capture

When the operator presses a key, the IWS position responds by checking file XKBOARD.TBL for an application-specific section defined by the name of the application currently running. If it finds such a section (NTDA, for example), it matches the key in question with its scan code and any associated key modifiers. Next the scan code–modifier mask combination is associated with a key action set. Finally the key action, the functional development arising from the keypress, is found and implemented.

See the following sections for descriptions of the terms used above.

5.5.3.3.1 Keys and modifier masks

Each physical key on the keyboard is identified by a scan code. There are four key modifiers: extended, control, shift, and alt. They can be combined (ctrl-alt, for example) into a modifier mask. Since each key modifier can have a value of 0 or 1 (no or yes) and there are four modifiers, there can be 16 different values (0–15) for modifier masks.

5.5.3.3.2 Key action

While the scan code and modifier mask define the physical key, the key action defines what action is invoked when the physical key is pressed.

When the keyboard is being configured, most keys perform the actions printed on the default keycaps. For example, if no combination of scan code, modifier mask, and key action is found in file XKBOARD.TBL, then the original value printed on the key ("d," for example) equals the key action.

Service providers can datafill keys to reduce keystrokes by designating one key to perform an action. For example, the key with scan code "60" is at the upper left of the keyboard. A service provider might want to reserve that key to replace the several keystrokes it takes to access the services menu and select "toll and assistance." Using modifier mask "0," meaning no key modifier is included, and specifying key action set "3" (for the services

menu as shown in Figure 30, "File XKBOARD.TBL sample," on page 102), the service provider matches the datafill in parameter "TOPS Serv Num" in file XSERVS.TBL with the specified action, "toll and assistance," in file XKBOARD.TBL.

5.5.3.3.3 Key action set

File XKBOARD.TBL can be divided into sections, so that one key can be datafilled to perform different actions for different applications. Different sections can be reserved for application-specific keys. The default section contains the key actions that are common among applications. Each application can define a unique set of key actions and store them in an application-specific section of file XKBOARD.TBL.

If NTDA is the application that currently has focus on the IWS, then each keystroke will be checked first against the NTDA section in file XKBOARD.TBL, so long as the section application name is identical to the application name listed on the registering line in file MPXINI.INI. See "MPXINI.INI" on page 105 for a discussion of datafilling NTDA in file MPXINI.INI.

The default section is further broken down into ten key action sets that indicate where to look to determine a key action. Key action sets 2–6 and 9 can be datafilled with the key actions particular to the various IWS menus. This type of datafill is described in section "Key action" on page 100.

Each IWS menu key action set value is datafilled in a table (file XSERVS.TBL for the services menu, file XFNCTS.TBL for the functions menu, and so on). See the following figure for an example of file XKBOARD.TBL.

```
[Default]
;=====================================================================
;                         Context Change Keys
;---------------------------------------------------------------------
;  Scan       Modifier
;  Code        MASK      Action Set    Action   Description
;=====================================================================
;
   43            1            1              41   ;<Shift>+Reset ==>
                                                      Context Change
;
;=====================================================================
;                         Call Processing Keys
;---------------------------------------------------------------------
;  Scan       Modifier
;  Code        MASK      Action Set    Action    Description
;=====================================================================
   98            0            1              12   ; Start key
   69            4            1              13   ; Misc key
   57            4            1              14   ; IC key
   107           0            1              15   ; Spl key
;
;=====================================================================
;                         Services Menu Hot Keys
;---------------------------------------------------------------------
;  Scan       Modifier
;  Code        MASK      Action Set    Action    Description
;=====================================================================
;
; The following is an example entry:
   60            0            3               0   ; Toll and Assistance
                                                      Hotkey
;
```

Figure 30. File XKBOARD.TBL sample

Once the service provider determines what key action to associate with a physical key, the KeyBind GUI provides the means to assign key actions easily. Figure 31 shows an example of what the service provider sees when assigning a key action.

Figure 31. KeyBind GUI example

5.5.3.3.4 NTDA key actions

The NTDA application can use the TOPS IWS keyboard, which has a main section and a call processing cluster. Figure 32 shows the default IWS keyboard layout.
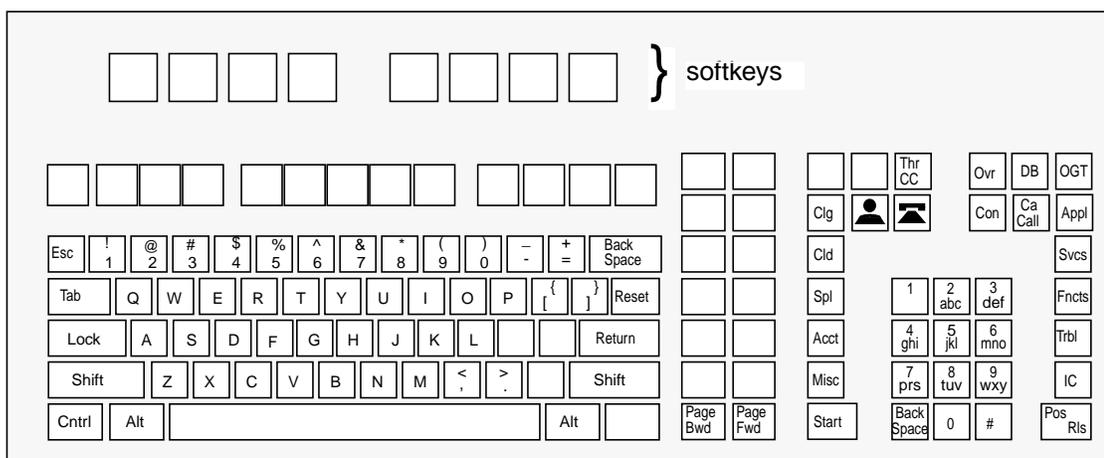
Figure 32. TOPS IWS keyboard

Even though various Nortel Networks DA databases sometimes call for different keys and keying-search strategies, the keyboard layout shown above is compatible with all Nortel Networks D&OS databases. The second row of keys (below the softkeys) and the key clusters on the right have clear keycaps with label inserts, to allow customization.

5.5.3.4 Remapping obsolete key actions

In IWS release 13.0, several NTDA-specific key actions became obsolete and were replaced by IWS generic key actions. For specific keys, refer to the list of IWS release 13.0 changes in "Revisions," section 9.0 on page 95.

Every obsolete NTDA-specific key action can be replaced by an IWS generic key action that fulfills the same function. To make the replacement key actions work, however, you must use the KeyBind utility to map them to the appropriate physical keys. If you install IWS Release 13.0 without reassigning substitute key actions from the IWS generic key set, then the **redisplay scripting window**, **backspace**, **page backward**, **page forward**, **half page backward**, and **half page forward** keys will not work in the NTDA application.

The first step is to *undefine* the keys. This is necessary because, when you load Release 13.0, the keys are still bound to their old key actions from the previous load, even though those old key actions are now identified as unused.

Once you have undefined the keys, follow the instructions in the KeyBind chapter of *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015, to map the equivalent IWS generic key actions to them. Then these keys will work in NTDA.

Note that the obsolete NTDA-specific key actions come from the application-specific key set (key set 7) in the NTDA section of the KeyBind utility. The substitute key actions, however, come from the IWS generic key set (key set 1) in the default section. **Important:** Even though you are using the IWS generic key set, you must be in the NTDA section when you bind the generic key actions. Otherwise, depending on your default key bindings, the keys to which you have bound them may not work when you are in NTDA.

5.5.3.5 Key macros

Key macros link multiple key actions and perform them as a single keystroke. Key macros are similar to hot keys, but they provide more flexibility because they can be created for any application that accepts keystrokes on the IWS position through the application programmer's interface/Software Development Kit (API/SDK). A key macro can be defined, for example, so that just one keystroke replaces those that otherwise are necessary to invoke an action (for example, Fncts, 1, 1 [Notify], Start, 1, 0, Start). When you press the key that triggers a given key macro, you see in rapid succession the screen displays that an operator would see while pressing each key separately. The difference is that the screen displays occur very quickly.

Up to 25 keystrokes can be combined into a single macro, and up to 25 key macros can be defined.

KeyBind is used to set up and edit key macros for use on the IWS position. KeyBind is described in *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015.

5.6 IWS base initialization files

Windows initialization files provide a standard format for Windows applications to access their initialization data. Initialization files allow comment lines that begin with a semicolon. Initialization files are composed of sections and sections are composed of entries. An entry can have an integer value or a string value. The basic form of the file is:

```
;Comment
[section name]
```

entry=value

The following IWS base initialization files must be configured specifically for the NTDA application. Refer to *TOPS IWS Base Platform User's Guide,* 297-2251-010, for more information on these files.

Table 26: IWS base initialization files that must be configured for NTDA

Initialization file	Description
MPXINI.INI	Lists applications to be started by IWS base at position initialization
CLNTTCPI.INI	TCP parameters used for communication to the DA database
MPXTOP.INI	DA database connection information

5.6.1 MPXINI.INI

File MPXINI.INI contains a listing of the applications the IWS base application will start when the IWS position is rebooted. This file must be configured to add the NTDA application so that it will be started during position initialization. To add NTDA to file MPXINI.INI, use the IWS provisioning tool (see Figure 33). Refer to *TOPS IWS RAMP and Provisioning User's Guide,* 297-2251-015, for information about using the IWS provisioning tool to alter the MPXINI.INI file.

If you want NTDA to be the default application for the position (that is, the default application to switch to if a call arrives at the position and no application is loaded to process a call of that TOPS service type), assign the NTDA application as the default registering application. Otherwise, define the NTDA application as one of the registering applications (as shown in Figure 33). Typically a billing or toll and assistance type application is listed as the default registering application.

The TOPS IWS position must be rebooted for any MPXINI.INI file changes to take effect.
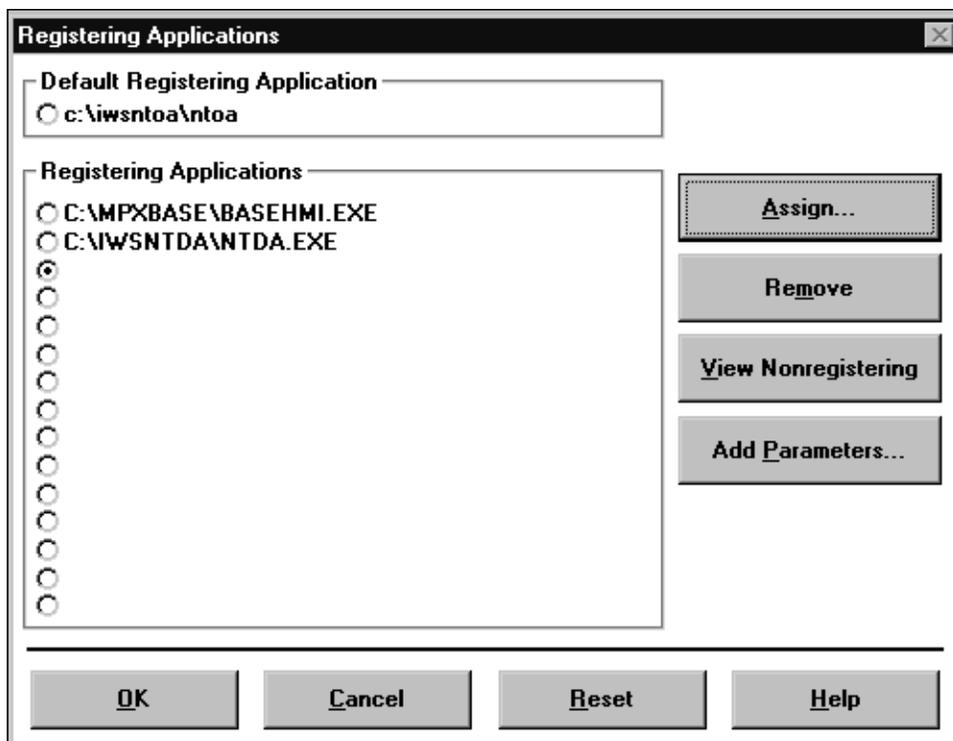
Figure 33. Adding NTDA as a registering application to MPXINI.INI

5.6.2 CLNTTCPI.INI

File CLNTTCPI.INI lists TCP parameters used for communication with the DA database. This file is datafilled with the provisioning tool, which is described in *TOPS IWS RAMP and Provisioning User's Guide,* 297-2251-015. Generally the default settings for this file are adequate and you do not need to make changes to this file.

5.6.3 MPXTOP.INI

NTDA uses MPXTOP.INI to provide various parameters for communicating with the DA database. File MPXTOP.INI is datafilled with the NTDA Setup utility. Refer to "Database Connections Configuration window" on page 67 for more information.

5.6.4 Scripting files

The following IWS base files must be configured for NTDA application use of the IWS scripting window. Refer to "IWS scripting window" on page 49 for more information on using the IWS scripting window in the NTDA application. Refer to *TOPS IWS Base HMI Application Guide,* 297-2251-013, for more information on these files.

<p align="center">**Table 27: IWS base scripting files that must be configured for NTDA**</p>

Scripting file	Description
SCRPTINI.INI	Contains various scripting parameters. Used for standard and enhanced scripting.
SCRPTSCR.SCR	Contains the script messages to be displayed. Used by standard and enhanced scripting.
XSCRULES.TBL or equivalent filename	Contains script matching rules. Used by enhanced scripting only.

5.6.4.1 SCRPTINI.INI

The NTDA application uses parameters in file SCRPTINI.INI to configure IWS scripting for DA calls. The SCRPTINI.INI file contains the scripting enable/disable parameter that specifies whether or not the window should be displayed automatically at call arrival, and also parameters for specifying the size and location of the scripting window. For standard scripting, this file also contains a priority hierarchy used at call arrival to determine the message to display in the scripting window. For enhanced scripting this priority hierarchy is ignored. In the NTDA section of the SCRPTINI.INI file, the following datafillable parameters are for setting priority hierarchy for IWS script display:

- SPIDPriority
- CT4QPriority
- COPriority

The SCRPTINI.INI file can be datafilled with the provisioning tool, which is described in *TOPS IWS RAMP and Provisioning User's Guide,* 297-2251-015.

5.6.4.2 SCRPTSCR.SCR

File SCRPTSCR.SCR contains text messages for display in the IWS scripting window. This file is used for both standard and enhanced scripting. Any script messages that are required for the NTDA application's use of the IWS scripting window should be added in this file. Refer to *TOPS IWS Base HMI Application Guide,* 297-2251-013, for more information on file SCRPTSCR.SCR and how to configure it.

6.0 NTDA logs

The NTDA application generates IWS position logs to capture database link state changes, application errors, and other exceptional events. Refer to *RAMP and Provisioning Guide*, 297-2251-015, for specific information on the log report format and how to view the logs. A list of logs generated by the NTDA application is found in the **IWSNTDA.DOC** in the **C:\IWSNTDA** directory.

7.0 Engineering information

7.1 Hardware requirements

The NTDA application requires the minimum hardware system configuration, as described in *TOPS IWS Base Platform User's Guide,* 297-2251-010.

7.2 IWS software requirements

The NTDA application requires the following IWS software packages:

- IWS base
- IWS billing

7.3 Directory assistance requirements

The connecting directory assistance software must communicate with NTDA using the Nortel Networks Universal Message Protocol (UMP).

For sites using ADAS Plus, the connecting directory assistance software must have its "datatype 15" feature enabled.

Nortel Networks recommends that the database be enabled for flexible display version 2 listing summary format. Directory One 2.01.02 or higher is required to support this format. For more detail, refer to the current Directory One documentation.

7.4 Commercial software requirements

The NTDA application requires the commercial software described in *TOPS IWS Base Platform User's Guide,* 297-2251-010.

7.5 Mouse considerations

The use of a mouse is not recommended for navigation in the NTDA application. Whether the mouse is disabled or not, however, you should be aware of the following two special circumstances:

- If you are using a mouse with the NTDA application, you may experience a loss of focus. Clicking the mouse in certain areas causes the active window to gray out and lose focus. Softkeys do not respond, and any keyboard keystrokes associated with the window may be inactivated. To regain focus, move the cursor over the window where you were working and click the mouse.

- You should also be aware that it is possible to use the mouse to cut and paste.

7.6 Use of color in NTDA

The NTDA application can be used by colorblind operators. NTDA does not use color in any display where color is necessary to distinguish meaning.

8.0 IWS Message Editor (SMSDA Support)

The IWS Message Editor, also known as "Short Messaging Service" (SMS), can be used to send short messages (e.g. DA listings). This service is actually comprised of three messaging features that enable the operator to:

1. Send short messages to Short Message Service Centers (SMSCs) to be forwarded to customer devices, e.g. SMS-capable cell phones, some WAP-capable devices, and some pagers;
2. Send a short text based E-mail message to accessible E-mail clients;
3. Send a text based listing screen and/or text information (e.g. trouble code) to a Directory One administrative printer.

While referencing the messaging capabilities of this service as "short messaging", SMS does not actually transmit messages directly to wireless devices. The service generates an E-mail which is sent (via Directory One network connectivity) to a server. When the E-mail is sent to a server which provides messaging services, a "short message" is sent to a wireless device. It is the messaging server which actually sends the contents of the E-mail to the specified wireless device. While generally referring to such wireless devices as "SMS" devices, the server may actually transmit the message using a variety of wireless protocols such as SMS, WAP, alphanumeric pager protocols, etc. This architecture results in the ability for the operator to send short messages (such as a DA listing) to a wide variety of end-user devices such as SMS-capable cell phones, wireless PDAs, Blackberrys^{TM}, alphanumeric pagers, and similar devices. The messaging server handles the actual transmission to the wireless device using the appropriate protocol, and the IWS is dependent upon a provider's server to complete the message transmission.

The functionality of the IWS SMS is implemented in both the IWS position and the Nortel Networks Directory One system, and thus requires Nortel's Directory One system. On the IWS side, the functionality is implemented through a window called the Message Editor. Corresponding functionality in Directory One is named "SMSDA."

Directory One provides message formatting and connectivity to the Internet for both the SMS and E-mail features, and provides connectivity to its DA administrative printer(s). The IWS provides the human-machine interface for the operator to create the short messages and the IWS attempts to automate some the messaging process for the operator. By leveraging the existing Directory One and IWS network, this design strategy minimizes required changes to the existing customer network.

At a high level the architecture appears as follows:
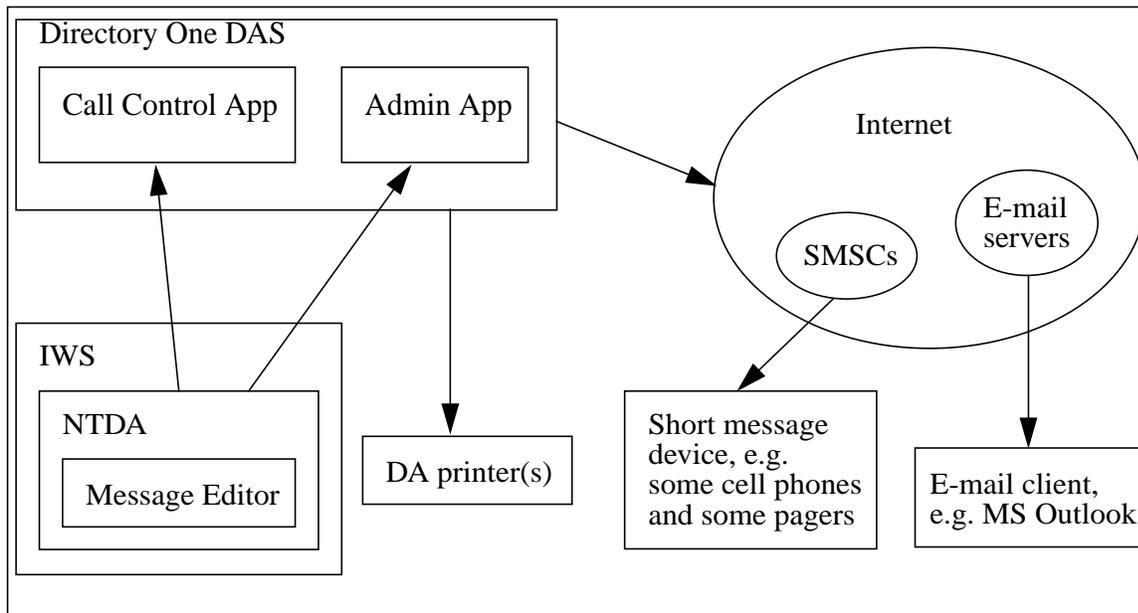
FIGURE 34. SMS architecture

As already mentioned, SMS messaging, E-mail messaging, and DA printer messaging are all supported on the IWS through a window called the Message Editor window. To bring this window up, the operator must press one of the IWS generic key actions, "Message Editor", "Message Editor - SMS", "Message Editor - E-mail", or "Message Editor - DA Printer". Once this key is pressed, the message editor appears. From the message editor window, messages may be sent to an SMS server, to an E-mail server, or to a Directory One administrative printer.

8.1 Human-Machine Interface

The message editor has up to three modes; SMS, E-mail, and DA printer modes. The operator can change the current mode at any time by pressing a message editor softkey. The initial mode of the message editor is datafillable through the IWS initialization file MSGEDIT.INI. The Nortel Networks default for the editor's initial mode is SMS.

8.1.1 Message editor window

A visual break down of the message editor window is as follows:
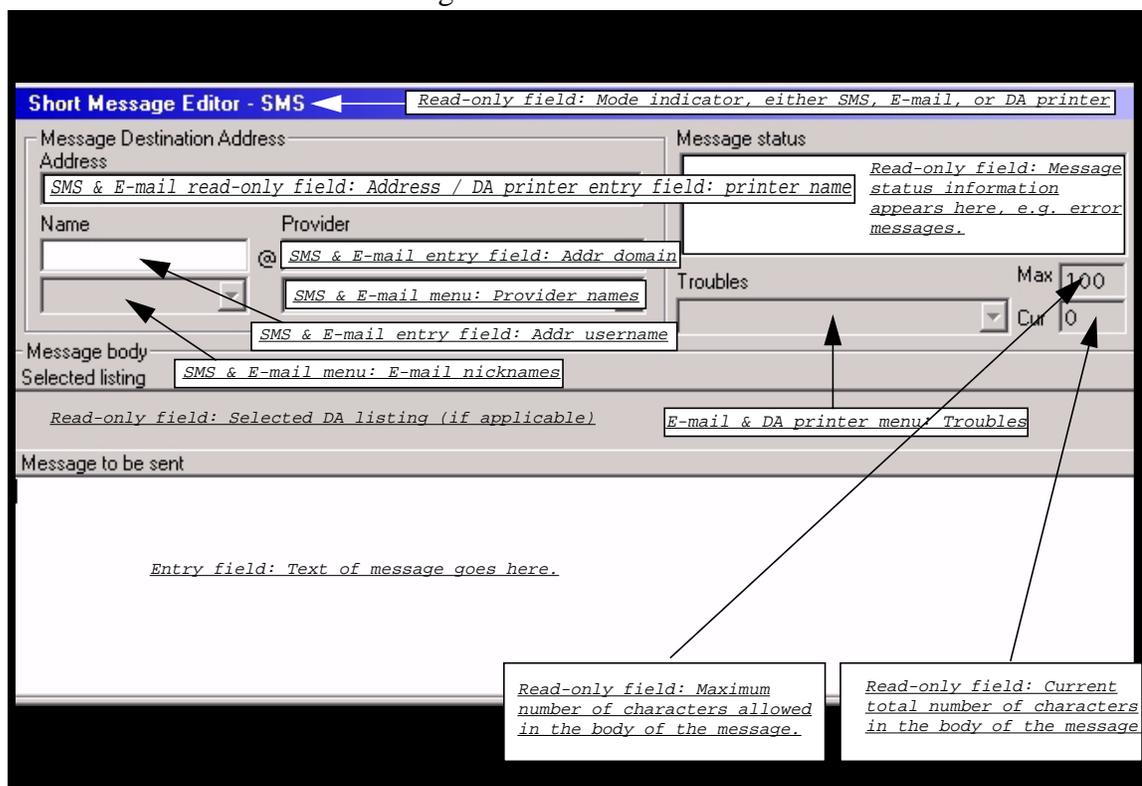
FIGURE 35. Message editor window

Note that depending on the current message editor mode, only applicable menus and entry fields are enabled.

8.1.2 Message addressing

The IWS message editor supports operator entry of the message address. Where possible, the IWS message editor attempts to automatically address the message based on IWS datafill and call arrival information.

8.1.2.1 Address name field and menu

For SMS message mode, the username portion of the address defaults to the calling number. If the operator wishes to change the address username, he or she would use a message editor softkey to toggle the cursor to the name field and edit the field. An example

of this scenario is when the calling party wants to send a message to someone else's cell phone.

In E-mail mode, the default address username is driven by an entry in the IWS datafill file XMEEMLNM.TBL. The operating company may want to datafill a supervisor's or DA administrator's username so that the E-mail would go to this username by default. Unless E-mail mode is only used to send messages to a single address, the operator will always have to enter a username. To expedite operator entry of the address username, the message editor provides a name menu in E-mail mode. In E-mail mode, the name menu provides up to 26 E-mail nicknames or E-mail aliases. The names and associated E-mail addresses are datafilled in the IWS datafill file, XMEEMLNM.TBL. When the operator activates this menu and makes a selection, the E-mail address is automatically updated with the associated E-mail address username and domain.

In DA print mode, the address name field and name menu are not applicable and thus are disabled.

8.1.2.2 Address provider (domain) field and menu

In SMS mode, the domain portion of the address can be automatically populated based on IWS datafill. Based on an entry in the MSGEDIT.INI file, the domain can be automatically populated with a datafilled default value or can be driven by the call SPID or trunk group. If the operator chooses, the operator can change the domain via two different methods. First, as with the address name field, the operator using a softkey to toggle to the provider field and type in the desired domain. Alternately, the operator may use the SMS provider menu, assuming the desired provider is listed in that menu. The SMS provider menu is accessed by pressing a message editor softkey.

In E-mail mode, the default provider (domain) is provided by a default entry in the XMEEMLNM.TBL file. No automatic domain population feature exists as in the SMS mode. As with the SMS mode, the operator can change the domain by manually keying a domain or using the E-mail provider menu. Note that the E-mail provider menu entries are different from the SMS provider menu entries. E-mail domains might include aol.com, msn.com, and compuserve.com, whereas SMS domains include messaging.sprintpcs.com and messaging.nextel.com. Entries for the E-mail provider menu and the SMS provider menu are determined by two different IWS datafill files.

In DA print mode, no provider is required and thus the domain entry field and provider menu are disabled.

8.1.2.3 Address field

In SMS and E-mail modes, the address field is read only. The message editor automatically updates this field based on the current contents of the address username and domain fields.

In DA Printer mode, the address field is enabled by default and is used for printer name entry. This field can be used to specify different DA printers. A customer's Directory One printer configuration dictates valid value(s) for this field. The default DA printer address is

driven by an entry in the MSGEDIT.INI file. For most customers, this default entry should be a '0' for the Directory One printer 'lp0'.

In DA Printer mode, the address field can be disabled through datafill to ensure that DA print outs will only be sent to the default DA printer. See the MSGEDIT.INI file.

8.1.3 Message text

The IWS message editor supports operator entry of the message text. If the SMS or E-mail modes are enabled, the message editor can automatically populate the message text field with a datafilled text template based on the call SPID or call trunk group. The operator can edit this template if desired, or the operator can enter an entirely different message. The message editor also supports copying different versions of the selected listing to the message text field. These features are discussed in more detail later in this document.

In E-mail or DA Printer modes, the trouble menu is also available for quickly appending datafilled trouble codes and/or trouble strings into the message text field. The trouble codes/strings are datafilled in the IWS datafill file, XMETRB.TBL.

8.2 Message editor softkeys

When the message editor is activated, the IWS softkeys automatically update to message editor softkeys. Depending on the mode of the message editor, SMS, E-mail, or DA printer, one of three message editor softkeys subsets is shown. The message editor softkey labels are based on the language datafill file, MESFTKEY.LNG.

The message editor softkeys are listed in the following table. The text labels listed in the table are the Nortel Networks default softkey labels. In the table below, note the SMS, E-mail, and DA print columns to see which softkeys are applicable to each message editor mode.

TABLE 28. Message editor softkey

Soft-key#	Label	Full name	SMS	E-mail	DA print	Description
0	EditFld	Edit Field	X	X	X	Moves the cursor between the editable fields within the message editor window. The number of editable fields is different depending on the current mode of the message editor.
1	MsgType	Message Type	X	X	X	Toggles through the message editor modes; SMS, E-mail, and DA printer.
2	ClrNam	Clear Name	X	X		Clears the name field and the username portion of the message address.
3	ClrMsg	Clear Message	X	X	X	Deletes all the text in the body of the message.
4	Lst2Msg	Listing To Message	X	X	X	Copies the NTDA selected listing shown in the selected listing field to the message body field. Repeated presses of this softkey will automatically toggle through the available selected listing formats.
5	RN2Msg	Requested Number To Message	X	X	X	Appends the requested phone number from the selected listing to the text in the message body.
6	PrvMenu	Provider Menu	X	X		Activates the provider menu so that a service provider can be selected. When a provider is selected, the associated domain is put in the domain field and the domain portion of the message address is updated.
7	SendMsg	Send Message	X	X	X	Sends the completed message to the message address and tears down the message editor.

Soft-key#	Label	Full name	SMS	E-mail	DA print	Description
8	Msg2CB	Message To Clipboard	X	X	X	Copied the current message body contents to the Windows clipboard for use by other applications.
9	Nam-Menu	Name Menu		X		Activates the Name Menu so that the operator can select an E-mail address nickname. Per datafill an E-mail nick-name has an associated E-mail address, i.e. an E-mail username and an E-mail domain.
10	ClrAddr	Clear Address			X	Clears the message address.
11	ClrPrv	Clear Provider	X	X		Clears the provider menu, the provider (domain) field, and the domain portion of the message address.
12	CB2Msg	Clipboard To Message	X	X	X	Copies the current contents of the Windows clipboard to the body of the message.
13	Clg2Nam	Calling number To Name	X			Copies the calling number to the name field and the username portion of the message address.
14	TrbMenu	Trouble Menu		X	X	Activates the trouble menu so that a trouble can be selected and the associated text put in the message body.
15	CancMsg	Cancel Message	X	X	X	Cancel message send and exit the message editor. The message editor is hidden and the prior screen is displayed.

8.3 Message editor modes

The message editor has three modes of operation; SMS mode, E-mail mode, or DA printer mode. By default, the operator can have access to all three of these modes, but message editor datafill allows the operating company to restrict the operator to any one of these three modes or to any two of these three modes. Datafill also supports the operating company determining the initial mode of the message editor.

8.3.1 SMS mode

The message editor supports an SMS mode. This mode can be used for sending a short text message over the Internet or Intranet to SMS capable devices, e.g. cell phone with message display. Below is an example call using the message editor to send an SMS message. The operator receives a DA call and does a residential search. The DA screen could appear as follows:

FIGURE 36. Residential search result

The operator selects a listing. In this case the first listing is selected by pressing 'A'.

FIGURE 37. Selected listing

The operator then activates the message editor by pressing either the "Message Editor" or the "Message Editor - SMS" key action. By default, the message editor automatically starts up in SMS mode. Figure 38 shows the message editor's initial display for this example.

FIGURE 38. Message editor's initial display

Notice that the softkeys are automatically updated for the message editor. More specifically, the softkeys have been updated for the message editor in SMS mode.

Since the operator selected listing 'A', the 'A' listing automatically shows up in the "Selected listing" field.

The initial text in the message body is a compressed version of the listing. The listing is shown minus the line designators and formatting characters. The formatting characters here consisted of extra space characters and fill character '.'. New message editor datafill enables the IWS to strip off leading line designators, trailing line designators, and the fill character. Since the listing is a single line listing, the entire listing fits in the message. Note that at any point the operator may add, change, or delete text from the message body by simply typing in the 'Message to be sent' field.

With this example call, since the calling number was provided to the IWS from the TOPS switch, the message editor automatically populated the message address username with the calling number. The assumption here is that the customer wants the message sent to the cell phone that he or she is currently using. If this is not the case, the operator can change the username portion of the message address.

Also with this example call, the provider could be determined based on IWS datafill and the call SPID so the provider field and the address domain are automatically populated, and the maximum message size is appropriately set. Also note that the current message size field is automatically updated appropriately. The message text is an automatically compressed version of the listing. The listing is shown minus the line designators and formatting characters. The formatting characters here consisted of extra space characters and fill character '.'. Message editor datafill enables the IWS to strip off leading line designators, trailing line designators, and the fill character. Since the listing is a single line listing, the entire listing fits in the message. Note that the operator may add, change, or delete text from the message body at any point by simply typing in the 'Message to be sent' field.

At this point, the operator can choose to change any of these fields if desired or can just send the message by pressing the send message softkey. The operator may also choose to change the message's address or message text.

The message editor also provides functionality such that the operator can quickly change the text of the message. Figure 39 shows the screen after the operator has pressed the 'Lst2Msg' (listing to message) softkey once. Here the requested number is automatically embedded into a datafillable brandable message.

FIGURE 39. Lst2Msg example

The previous illustration is for a published number. If the requested number is non-published, the message could look similar to Figure 40 depending on IWS datafill. Figure 40 is per Nortel Networks default datafill.

FIGURE 40. Non-published number

Some listings may not have a number, published nor non-published. In this case, the message could look similar to Figure 41. The example in Figure 41 is per Nortel Networks default datafill.

FIGURE 41. No number for the listing

In Figure 42, the operator has again pressed the 'LgToMsg' softkey. Another message format shows up as the message text. The message is just the unformatted requested number from the listing.

FIGURE 42. Unformatted requested number

In Figure 43, the operator has again pressed the 'Lst2Msg' softkey. Another message format is displayed as the message text. This format is the existing listing including the line designator and all formatting characters. Again, since the listing is a single line listing, the entire listing fits in the message.

FIGURE 43. Single Line listing

There are no more message formats available. If the operator presses the 'LgToMsg' softkey again, the message text will cycle back to the first format, which was the compressed listing.

8.3.1.1 Message Send

The operator sends the message to Directory One by pressing the "SendMsg" softkey. When the operator presses the send message softkey, the message contents are validated. If the message passes validation, then the message editor window is torn down and the message is sent to Directory One to be forwarded appropriately. Figure 44 shows an example NTDA screen after an SMS message is sent:
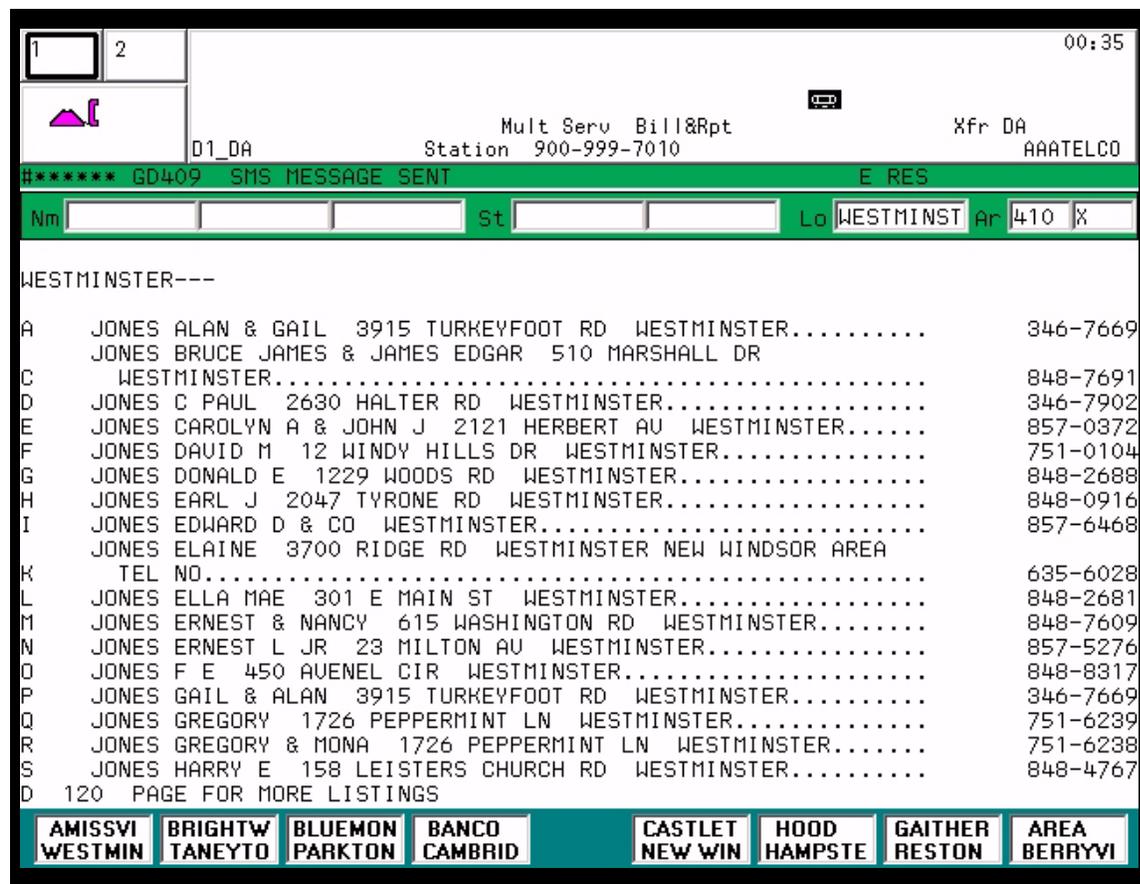
FIGURE 44. NTDA screen after an SMS message is sent

The screen looks similar when a DA print or E-mail message is sent except that the acknowledgement text from Directory One is slightly different. Once the message is sent, IWS does not receive an acknowledgement of successful message delivery to the final destination.

As mentioned previously, the user sends the message by pressing the "SendMsg" softkey. If the user decides not to send the message, the user can press the "CancMsg" softkey at any time during the message editor session. Once this cancel message key is pressed, the message editor window is destroyed, and NTDA again appears on the screen.

8.3.1.2 Restrict Non-Published Numbers

To prevent non-published number information, e.g. name and address, from being sent in the short message, the message editor supports a feature that restricts non-published numbers. If this feature is enabled per IWS datafill, then the default message for non-published numbers is a special datafillable text string. This text string along with the enable parameter for this restrict non-published numbers feature is datafilled in MSGEDIT.INI. The Nortel Networks default text string is "At the customer's request, the number is not published and is not listed in our records." Also, when this feature is

enabled, pressing the 'Lst2Msg' softkey only toggles between this text string and the text string "not published".

8.3.1.3 Message Addressing

With the previous example call, since the calling number was provided to the IWS from the TOPS switch, the message editor automatically populated the message address username with the calling number. The assumption here is that the customer wants the message sent to the cell phone that he or she is currently using. If this is not the case, then the operator can change the username portion of the message address by editing the name entry field.

In the example call, the address domain was also automatically determined based on IWS datafill and the call SPID. The operator can easily change the address domain by pressing the provider (domain) menu softkey. When activated, a datafilled domain provider list drops down. The operator may need to ask the customer for the appropriate cell provider. The operator selects the corresponding provider from the menu by pressing the single letter menu index and the IWS 'Start' key action. The address and address domain fields are automatically updated. If the desired provider is not in the list, the operator can type in the domain if he or she knows it. The domain menu holds up to 26 domains.

Figure 45 shows the SMS drop-down provider menu per default Nortel datafill.

FIGURE 45. SMS drop-down provider menu

In Figure 46, the operator has just press the P key and the 'Start' key, selecting the Sprint provider. Notice that the domain portion of the message address is automatically updated accordingly.
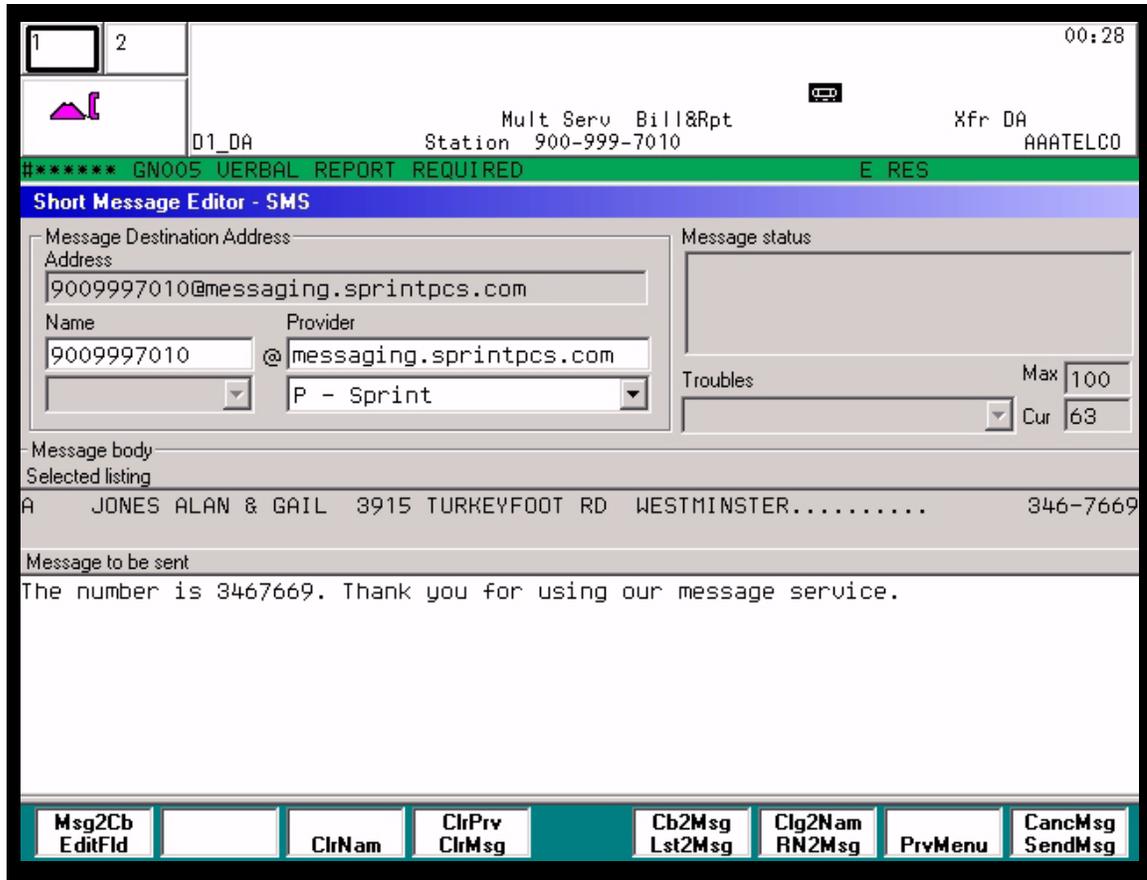
FIGURE 46. Sprint provider selected

8.3.1.4 Message Validation

As mentioned, the message editor does some validation before the message is sent to Directory One. If the message does not pass these validation tests, the message editor windows stays up and an appropriate error message is displayed in the message editor's 'Message status' box. When an error message appears in the 'Message Status' box, the error message is automatically erased once any key is pressed. An example error condition is when the message text is too long, i.e. the length of the message text is greater than the datafilled maximum message length setting. Figure 47 shows an example of this error condition.
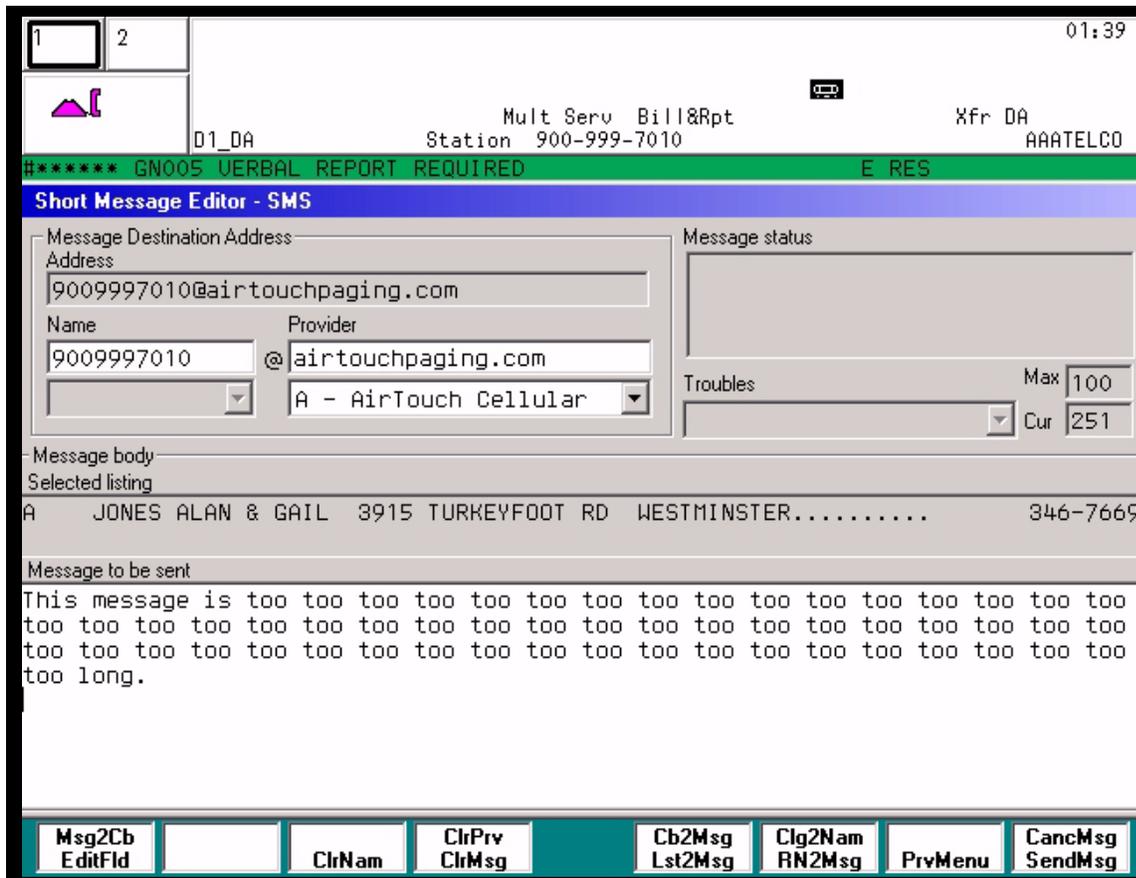
FIGURE 47. Error message

The following table lists all the error conditions checked for by the message editor before sending a message. Notice that all error conditions are not applicable to all three message types; SMS, E-mail, and DA printer.

TABLE 29. Send Messge Error Conditions

Error condition	SMS	E-mail	DA printer
Send Message Error: Please shorten the message to %d or less characters.	X	X	X
Send Message Error: No message specified. Please supply a message.	X	X	X
Send Message Error: No domain specified. Please supply a domain.	X	X	
Send Message Error: No username specified. Please supply a username.	X	X	
Send Message Error: No address specified. Please supply an address.	X	X	X

The following table lists error conditions associated with the message editor and the Windows clipboard.

TABLE 30. Clipboard Error conditions

Error condition	SMS	E-mail	DA printer
Clipboard to message: Clipboard data not available.	X	X	X
Clipboard to message: Unable to open clipboard.	X	X	X
Clipboard to message: Clipboard pointer error.	X	X	X
Clipboard to message: Unable to get clipboard data.	X	X	X
Clipboard to message: Unable to close the clipboard.	X	X	X
Message to clipboard: Unable to open the clipboard.	X	X	X
Message to clipboard: Unable to empty the clipboard.	X	X	X
Message to clipboard: Unable to allocate memory object.	X	X	X
Message to clipboard: Unable to close the clipboard.	X	X	X

8.3.2 E-mail mode

The message editor supports the E-mail mode for sending short messages over the Internet or an Intranet. These messages can be received by E-mail client applications, e.g. Microsoft Outlook. The E-mail mode is very similar to the SMS mode. The message editor window looks the same, but there are some important differences. First of all, the provider menu is supported like in SMS mode, but the list of providers is different. The associated domains are typical E-mail address domains, e.g. aol.com. The domains are datafilled in a different IWS datafill file than the one used for the SMS domains. E-mail mode supports a name menu. When the operator selects an E-mail nickname from this menu, the address username and domain are updated accordingly as per message editor datafill. E-mail mode also supports a trouble menu. The trouble menu supplies predetermined text and/or error codes for the operator to quickly append to the message text. The list of trouble text comes from an IWS datafill file. These trouble codes are not related to TOPS switch trouble codes. These trouble codes can be used for Directory One database administration activities.

Figure 48 shows the message editor in E-mail mode. In this session, the operator using the name menu has selected an E-mail nickname of "Barney" and per datafill, the E-mail address has been updated accordingly to "brubble@some.com".

FIGURE 48. Message editor in E-mail mode

As with SMS mode, the user sends the message by pressing the "SendMsg" softkey.

Figure 49 shows another example E-mail screen. In this illustration, the operator is sending an internal E-mail to a supervisor or DA database administrator. The default E-mail address username and address domain have been datafilled such that the operator does not have to enter the E-mail address. Datafill is also set so the message body contents automatically default to a text DA screen dump. The operator can send this message to a DA administrator instead of doing a DA print screen. The DA administrator can then print the E-mail, forward the E-mail, and/or simply view the E-mail contents on line.

FIGURE 49. Sending an internal E-mail to a supervisor or DA database administrator

The complete message text is not viewable in this example because the message is so long. As with all the message editor fields, the operator may page the text by pressing one of the IWS pagination keys, Page forward or Page backward.

For this example, the complete message body, i.e. the DA text screen dump, appears as follows:

```
09:34:22 Oct 01, 2002    Operator ID = 5002    Position ID = 2017


D1_DA             Station  900-999-7010                    AAATELCO
#****** GN005 VERBAL REPORT REQUIRED                E RES
Nm a                       St              Lo WESTMINST Ar 410  X


WESTMINSTER---


A    JONES ALAN & GAIL  3915 TURKEYFOOT RD  WESTMINSTER..........     346-7669
     JONES BRUCE JAMES & JAMES EDGAR  510 MARSHALL DR
C      WESTMINSTER...........................................     848-7691
D    JONES C PAUL  2630 HALTER RD  WESTMINSTER..................     346-7902
E    JONES CAROLYN A & JOHN J  2121 HERBERT AV  WESTMINSTER......     857-0372
F    JONES DAVID M  12 WINDY HILLS DR  WESTMINSTER..............     751-0104
G    JONES DONALD E  1229 WOODS RD  WESTMINSTER.................     848-2688
H    JONES EARL J  2047 TYRONE RD  WESTMINSTER..................     848-0916
I    JONES EDWARD D & CO  WESTMINSTER...........................     857-6468
     JONES ELAINE  3700 RIDGE RD  WESTMINSTER NEW WINDSOR AREA
K      TEL NO...................................................     635-6028
L    JONES ELLA MAE  301 E MAIN ST  WESTMINSTER.................     848-2681
M    JONES ERNEST & NANCY  615 WASHINGTON RD  WESTMINSTER........     848-7609
N    JONES ERNEST L JR  23 MILTON AV  WESTMINSTER...............     857-5276
O    JONES F E  450 AVENEL CIR  WESTMINSTER.....................     848-8317
P    JONES GAIL & ALAN  3915 TURKEYFOOT RD  WESTMINSTER..........     346-7669
Q    JONES GREGORY  1726 PEPPERMINT LN  WESTMINSTER.............     751-6239
R    JONES GREGORY & MONA  1726 PEPPERMINT LN  WESTMINSTER.......     751-6238
S    JONES HARRY E  158 LEISTERS CHURCH RD  WESTMINSTER..........     848-4767
D  120  PAGE FOR MORE LISTINGS
```

There are several important items to consider when sending E-mail text screen dumps. On the IWS, DA listings are shown in a fixed pitch font for readability. The message editor also shows the DA listing screen dump in a plain text format (i.e. not HTML format or Rich Text Format), but the E-mail client that receives the screen dump can display plain text messages in various fonts, fixed pitch fonts or variable pitch fonts. Some E-mail clients, e.g. Microsoft Outlook, allow the user to set the default font. For Outlook, Nortel recommends that the font be set to a fixed pitch font, e.g. Courier New. Using this fixed pitch font will make the text screen dump look more like the IWS screen display and will improve readability.

8.3.2.1 Automatic E-mail forwarding

Another important item is automatic forwarding of E-mails. An operating company may want screen dumps from their operators automatically sent to multiple supervisors, database administrators, etc. This can be automatically done by setting the default E-mail address to an internal E-mail account that has been specifically set up to do automatic forwarding of certain E-mails. The E-mail account can look for "CCA" or another string in the subject line and then automatically forward the E-mail to a list of addresses. Microsoft Outlook supports this capability. Also, if using the Outlook E-mail client, it is suggested that the forwarding option "Include original message text" be used. Using the forwarding option "Prefix each line of the original message" will distort the screen dump's appearance.

Lastly, if the operating company wants the E-mails to be sent to multiple users and print out(s) to be automatically generated, Microsoft Outlook supports automatically printing E-mails.

8.3.3 DA printer mode

The message editor supports the DA printer mode for sending information to a Directory One administrative printer. These Directory One printers are usually centrally located and are used for Directory One database administration activities.

The message editor can be used to send a DA text screen dump, a trouble code, a short text message, or any combination of these. Like E-mail mode, the trouble menu is supported in DA printer mode. The trouble menu supplies predetermined text or trouble codes for the operator to quickly append to the message text. The list of trouble strings comes from the same trouble menu datafill file as used in E-mail mode.

Also similar to E-mail mode, the message editor can be configured to automatically populate the body of the message with a DA text screen dump.

The name field, name menu, provider field, and provider menu are not supported in DA printer mode. To address a DA printer message, only the address field itself is used. The message address is a DA printer name, e.g. 'lp0', 'lp1',..., but the printer name can be abbreviated to just a single digit, e.g. '0' can be entered for 'lp0'. Directory One will automatically expand single digits to full printer names (i.e. printer addresses). The address field has a datafillable default printer address value. The Nortel Networks default datafill is '0' for printer 'lp0'.

Figure 50 shows the message editor in DA printer mode. In this session, the operator has identified listing 'A' as having a problem. The operator has selected 'C' from the trouble menu and thus a trouble C shows up in the message text. The operator has also added some text explaining the problem in detail. Note also that message text includes a DA text screen dump. For message addressing, the operator has kept the default printer, printer '0'.

FIGURE 50. Message editor in DA printer mode

As with SMS and E-mail modes, the user sends the message by pressing the "SendMsg" softkey.

For the previous example, the complete message body, i.e. DA text screen dump, appears as follows;

```
09:43:55 Oct 01, 2002    Operator ID = 5002    Position ID = 2017


D1_DA            Station  900-999-7010                      AAATELCO
#****** GN005 VERBAL REPORT REQUIRED                   E RES
Nm a                         St                 Lo WESTMINST Ar 410  X


WESTMINSTER---


A    JONES ALAN & GAIL  3915 TURKEYFOOT RD  WESTMINSTER.......... 346-7669
     JONES BRUCE JAMES & JAMES EDGAR  510 MARSHALL DR
C      WESTMINSTER.............................................. 848-7691
D    JONES C PAUL  2630 HALTER RD  WESTMINSTER................... 346-7902
E    JONES CAROLYN A & JOHN J  2121 HERBERT AV  WESTMINSTER...... 857-0372
F    JONES DAVID M  12 WINDY HILLS DR  WESTMINSTER............... 751-0104
G    JONES DONALD E  1229 WOODS RD  WESTMINSTER.................. 848-2688
H    JONES EARL J  2047 TYRONE RD  WESTMINSTER................... 848-0916
I    JONES EDWARD D & CO  WESTMINSTER............................ 857-6468
     JONES ELAINE  3700 RIDGE RD  WESTMINSTER NEW WINDSOR AREA
K      TEL NO................................................... 635-6028
L    JONES ELLA MAE  301 E MAIN ST  WESTMINSTER................. 848-2681
M    JONES ERNEST & NANCY  615 WASHINGTON RD  WESTMINSTER........ 848-7609
N    JONES ERNEST L JR  23 MILTON AV  WESTMINSTER................ 857-5276
O    JONES F E  450 AVENEL CIR  WESTMINSTER...................... 848-8317
P    JONES GAIL & ALAN  3915 TURKEYFOOT RD  WESTMINSTER.......... 346-7669
Q    JONES GREGORY  1726 PEPPERMINT LN  WESTMINSTER.............. 751-6239
R    JONES GREGORY & MONA  1726 PEPPERMINT LN  WESTMINSTER....... 751-6238
S    JONES HARRY E  158 LEISTERS CHURCH RD  WESTMINSTER.......... 848-4767
D  120  PAGE FOR MORE LISTINGS


Trouble code C
Alan & Gail live at 3910 not 3915.
```

8.4 Message editor and Microsoft Windows clipboard

With all message editor modes it is possible to use the Windows clipboard. Also NTDA now supports a IWS key action, "50 - Copy screen to clipboard," and NTDA can be configured to automatically copy a screen text snapshot to the clipboard just prior to message editor start up.

With NTDA auto clipboard population turned off, the operator can store a DA text screen dump in the Windows clipboard, complete the current call, withhold calls, and then bring up the message editor in a DA administrative session. At this point, the operator can take his or her time and enter in appropriate text in the short message.

With NTDA auto clipboard population turned on, the message editor in E-mail and printer modes starts up with the message body automatically populated with a text screen dump. The operator can access the message editor during a call, send the screen text dump, and then complete the call. With this practice, the operator just has to remember they have a customer online and probably should limit their keying.

Here are two examples of an operator using the message editor to send a DA text screen dump. Both of these methods are applicable to sending a short message to a DA printer or to an E-mail address.

An Example of "Calls withheld" method (MessageEditorCopyToClipboard=FALSE):

- Normal DA call arrival
- Normal search and subsequent listing display
- Enter line selector if applicable
- Press IWS key action, "50 - Copy screen to clipboard". This key action creates a text screen dump and saves this screen dump to the Windows clipboard.
- Handle more calls...
- Withhold calls
- Complete current call
- Now while in the calls withheld state, press the hotkey, Application+DA+Start, to start a DA admin session
- Access message editor in DA print or E-mail mode (At this time the Windows clipboard, i.e. text screen dump, is automatically copied to the message body)
- If desired, append trouble code(s) and/or text to the text screen dump
- If needed, change message address from the default
- Press the send message softkey
- Accept calls

An example of "In call" method (MessageEditorCopyToClipboard=TRUE):

- Normal DA call arrival
- Normal search and subsequent listing display

- Enter line selector if applicable

- Access message editor in DA print or E-mail mode (At this time the Windows clipboard, i.e. text screen dump, is automatically copied to the message body)

- If desired, append trouble code(s) and/or text to the text screen dump

- If needed, change message address from the default

- Press the send message softkey

- Complete the call

Comparing these two methods, the first method requires more actions by the operator, but with this method the operator is doing the E-mail or print message work while not handling a call. The operator can take his or her time while entering in a text message. Note that with either method, only one text screen dump can be saved at a time to the Windows clipboard.

Both methods cannot be enabled at the same time. To enable the NTDA feature so that message editor automatically copies a text screen snapshot to the Windows clipboard at start up, the NTDAINI.INI datafill parameter, MessageEditorCopyToClipboard, must be set to TRUE. The NTDA provisioning tool, NTDASETP.EXE, has been updated to support setting this parameter. To modify this setting, start up NTDASETP and access the "Display Options" window. Figure 51 shows the "Display Options" window with the "M. E. Copy to clipboard" check box.
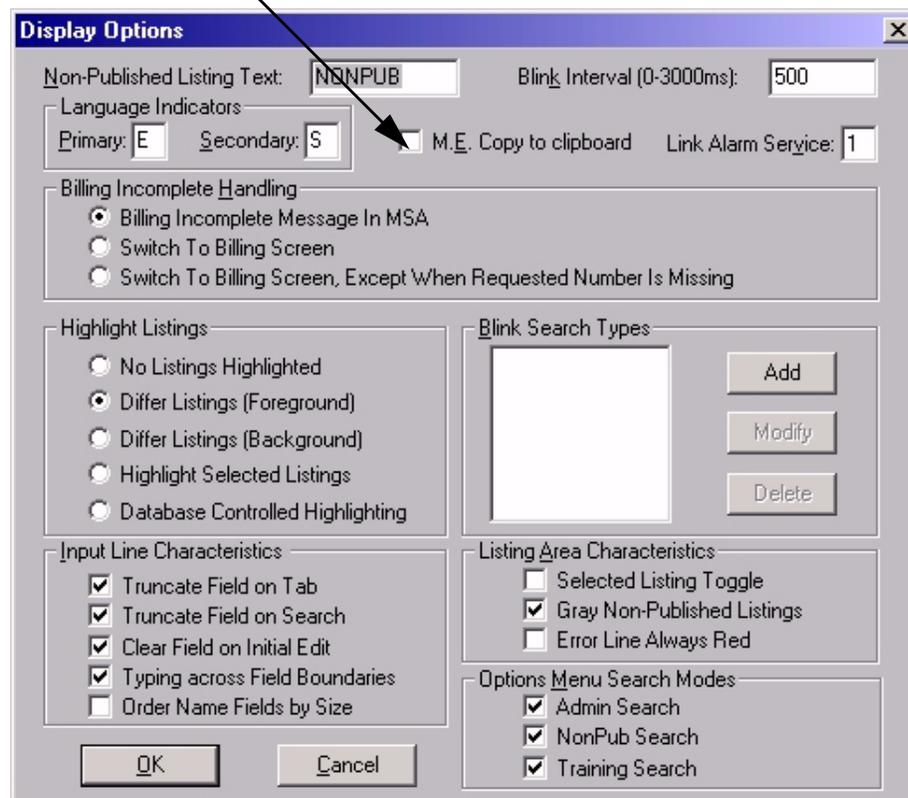
FIGURE 51. "M. E. Copy to clipboard" check box

8.5 Message editor fonts

The message editor is integrated with NTDA to speed up operator message handling. This integration with NTDA includes using the current NTDA font. Since the message editor can send the actual DA listing in an E-mail, the listing is shown in the message editor just as it is in the NTDA listing screen. Thus, the current NTDA font is used as the message editor font.

8.6 Message editor keying and IWS key actions

IWS generic key actions provide message editor support. These generic key actions are as follows:

- *Message Editor* - Activates the message editor in the datafilled default mode; SMS, E-mail, or DA Printer mode.

- *Message Editor - SMS* - Activates the message editor in the SMS mode.

- *Message Editor - E-mail* - Activates the message editor in the E-mail mode.

- *Message Editor - DA Printer* - Activates the message editor in the DA printer mode.

- *Copy screen to clipboard* - Copies a text screen dump to the Windows clipboard.

Note that the Message editor datafill supports the user changing the message editor mode once the editor window is displayed. So after pressing one of the above key actions, the user can then access the other datafilled message editor modes by simply pressing the 'MsgType' softkey once or twice.

When typing a message, the user may need characters that are not normally used on an IWS position, e.g. punctuation marks, space bar, and return. The physical keys normally associated with these characters are often mapped to unique IWS functionality or application-specific functionality. For example, with NTDA the space bar is often mapped to NTDA's "Next Major Field" key action. Thus the space bar would not generate a space character when NTDA is active. It instead causes NTDA "Next Major Field" functionality. While the message editor is active, the space bar needs to generate the space character so that the operator can enter or edit a text message. To achieve this functionality, the message editor is designed such that the physical keys listed below cause the expected characters to be produced in the message editor window, e.g. the "," physical key always generates the "," character. To achieve this functionality no key mapping via IWS Keybind is specifically required or supported by IWS and the message editor.

TABLE 31. Message editor hardcoded physical keys/characters

Message editor hardcoded physical keys/characters			
Not shifted	Shifted	Not shifted	Shifted
a-z	A-Z	1	!

Message editor hardcoded physical keys/characters			
Not shifted	Shifted	Not shifted	Shifted
,	<	2	@
.	>	3	#
[	{	4	$
]	}	5	%
\	|	6	^
;	:	7	&
'	"	8	*
space	space	9	(
-	_	0	)
=	+		

8.7 Message editor and TOPS services

The TOPS switch, IWS, and the message editor can be set up to provide dedicated billable services for SMS, E-mail, or both. TOPS switch service datafill can be modified adding services for SMS and E-mail. Corresponding IWS service datafill, i.e. the XSERVS.TBL file, can be modified to add services for SMS and E-mail. The message editor initialization file should also be modified for the services. There are four service-related parameters in the MSGEDIT.INI file. If setting up a dedicated SMS service, then the "SMS_service_enable" parameter should be changed from 0 to 1, and the "SMS_service_number" parameter should be set to the SMS service number that corresponds to the SMS service number datafilled in the switch and IWS. If setting up a dedicated E-mail service, then the "Email_service_enable" parameter should be changed from 0 to 1, and the "Email_service_number" parameter should be set to the E-mail service number that corresponds to the E-mail service number datafilled in the switch and IWS.

If the service datafill in the MSGEDIT.INI file is not done, then the SMS and E-mail services will function properly except that the operator will also have access to the message editor's SMS and E-mail modes while in the DA service. Thus if the operator brings up the message editor in DA, then SMS and E-mail specific billing will not be done.

With a dedicated SMS service, an example call flow for an SMS call could go something like the following;

- Customer dials 411
- Normal DA call arrival
- Operator does a search and gets a listing display

- Operator enters a line selector

- Customer requests an SMS message

- Operator switches to SMS or E-mail service via service menu keying, a service menu hotkey, or an applicable IWS key macro

- Operator presses IWS key action for SMS message editor

- In the message editor window, only if necessary, the operator completes the message and address

- Operator presses the message editor send message softkey

- Operator releases the call by pressing Position Release key, or by entering a line selector and pressing Release To Audio key.

An example call for an E-mail call would be very similar.

For the preceding SMS call example, keying could be significantly reduced by creating an IWS key macro that contains the keying for the IWS service change and starting the message editor in SMS mode. The IWS key macro could be defined as follows;

- 'Services menu' key action

- Number key(s) for SMS service

- 'Start' key action

- Some multiple of 'Do Nothing' key actions as needed for waiting for the service change to complete

- 'Message Editor - SMS' key action

Due to local call handling practices, SMS and E-mail call flows could vary greatly from the preceding example SMS call flow.

8.8 Message editor and DA administrator sessions

An operator or supervisor need not log into the switch to use the message editor. The message editor can be accessed in a Directory One administrator session. Thus SMS messages, E-mails, and DA print outs can be initiated from a DA administrator session.

8.9 Mouse and the message editor

The message editor supports using a standard mouse, but a mouse is not required. The message editor can be navigated with the IWS softkeys and the IWS START key.

8.10 Screen resolutions and the message editor

The message editor supports different screen resolutions as does the rest of the IWS software. In the 640x480 and 800x600 screen resolutions, the message editor window occupies most of the application window space which exists between the IWS MSA at the top of the screen and the IWS softkeys at the bottom of the screen. In larger screen resolutions, the message editor window occupies only a portion of the application space between the IWS MSA and IWS softkeys. All previous message editor illustrations in this document have shown the message editor in a 640x480 screen resolution. The message editor in 800x600 screen resolution looks very similar. Figure 52 shows the message editor in 1024x768 screen resolution. Notice that the NTDA window is visible in the background.
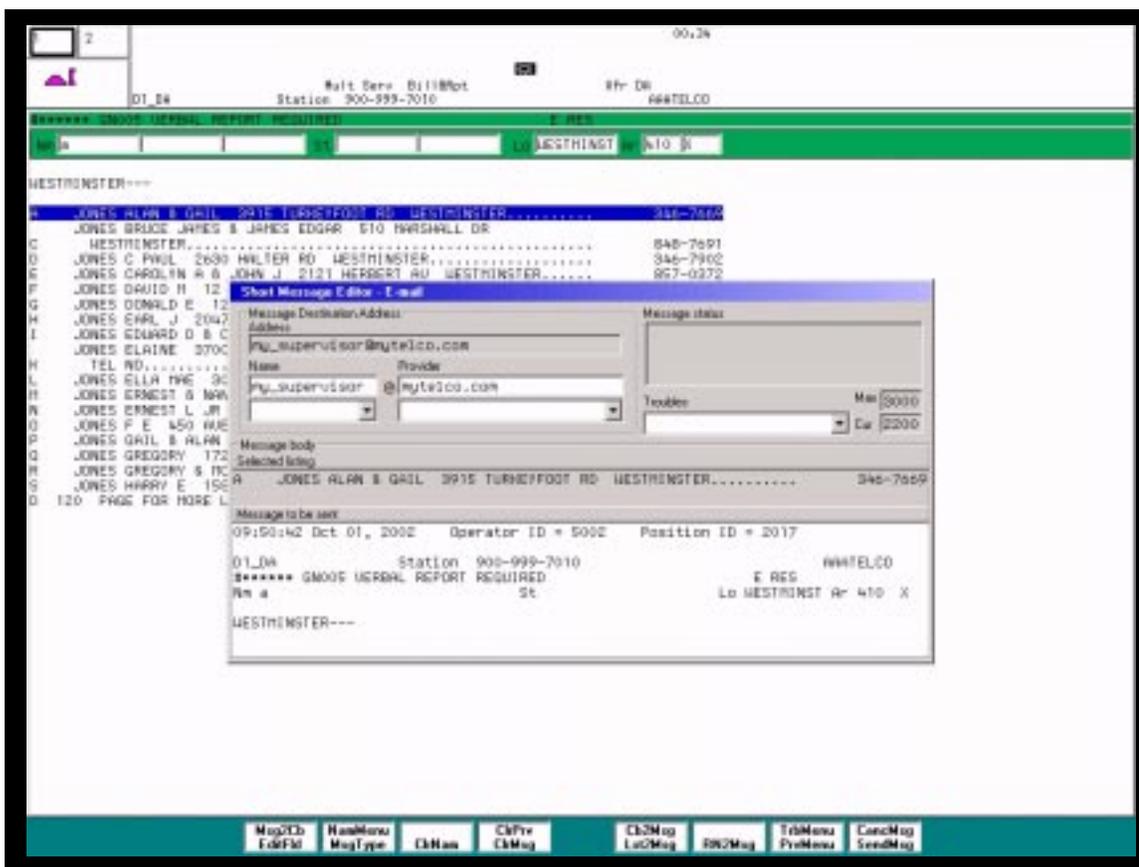
FIGURE 52. 1024x768 screen resolution

8.11 Limitations and Restrictions

- The short messaging features are only supported on NTDA based calls and NTDA administrative sessions. While messages can be sent more easily during DA calls, the NTDA administrator session provides a way for the operator to send a message during a toll call, but the operator position must be running IWS NTDA software and be connected to the Directory One system. Also, it is possible to set up a separate billable service or services for SMS and E-mail.

- The short messaging features require Directory One DAS and the customer's Directory One network. At this time, the short message editor is not compatible with other DA systems and does not support sending SMS and E-mail messages directly to the Internet.

- Directory One DAS must have access to the Internet to send SMS and E-mail messages. Since Directory One provides the connectivity to the Internet, direct connectivity between the IWS LAN and the Internet is not required for these short messaging features.

- Unless a separate service or services is set up for SMS and E-mail, then billing information for the SMS and E-mail services is only tracked within the Directory One system, not by the IWS position and not within the standard billing system provided by DMS TOPS.

- The Directory One listing summary feature should be enabled.

- The short messaging features require at least IWS release 17.1.

- The short messaging features require at least Directory One Release 2.03.00. Release 2.03.00 contains corresponding Directory One short message functionality, Call Control 2.03.00, XR 169-01475. (Note: Changing the E-mail message "subject area" requires Directory One Call Control Engineering Note EN1646 installed on top of 2.03/XR1465. EN1646 will be part of the Directory One 2.04 release.)

- An e-mail gateway and/or 2 TCP/IP(SMS/PP) connections to each SMS/C must be provided. Directory One supports either of these options on a per SPID, etc. basis. Heavier usage may require SMS/C connectivity while light usage may use E-mail.

- Depending on the types of messages and operator practices implemented, sending messages can be time consuming and thus may have a noticeable impact on operator Average Work Time (AWT) sometimes called Customer Service Time (CST).

- Directory One's successful acknowledgement to a SMS or E-mail send message request does not mean the message has been sent successfully, only that Directory One received the message successfully. Waiting for an E-mail/SMS 'message sent' confirmation would be impractical as it would tie up the operator for too long. This arrangement is similar to sending messages with a typical E-mail client, e.g., Microsoft Outlook. The client only immediately acknowledges that the mail server received the message.

- Directory One's successful acknowledgement to a DA print send message request does not mean a print was successful, only that Directory One received the message successfully. Waiting for a 'print complete' confirmation would be impractical as it would tie up the operator for too long.

- DA printer mode supports only printers accessible from the Directory One network.

- In SMS mode, to help the message editor automatically address messages to an SMS capable device (e.g. PCS phone), TOPS switch datafill must be such that TOPS sends the 10 digit calling number to the IWS at call arrival. The calling10-digit number is needed because the message editor uses the 10-digit number as the address username.

- Various providers set their maximum message length based on different message components (e.g. message body, from address, etc.). Providers are not consistent in setting these maximum lengths. This restriction must be considered when setting the maximum message length datafill.

- The maximum length for E-mail and SMS address surnames is 25 characters. Similarly, the maximum length for E-mail and SMS address domains is 25 characters.

- In SMS mode, the message editor supports up to 25 digit phone numbers. The message editor is designed for North America.

- If the operator brings up the message editor and starts composing the message, but terminates the message editor without pressing the send message softkey, then the message is not sent and the operator's edits are lost. There are many ways to terminate the message editor without first sending the message. Some of these include keying cancel message softkey, Clg key, Cld key, IC key, Misc key, Spl key, IWS menu key, and position busied while handling a call.

- If using the screen text snapshot capability, the user should be aware that the message editor uses the Windows clipboard. If the user or an application overwrites the clipboard before the message editor is activated, then the screen snapshot is erased. Normally this should not be a problem.

- The message editor window does not support monitoring.

- The IWS provisioning tool does not support changing the MSGEDIT.INI initialization file. Other message editor datafill files are supported by the IWS provisioning tool.

8.12 Upgrade Considerations

After installing IWS17.1, the message editor and NTDA datafill files must be updated as appropriate.

8.12.1 IWS Message Editor Datafill

The following section list all the message editor datafill files. Depending on which message editor features are used and operating company specifics, some portion of these datafill files must be updated in order to successfully use the message editor features.

8.12.1.1 MSGEDIT.INI

This initialization file is located in the Windows directory, e.g. C:\WINDOWS. It has miscellaneous settings for the message editor. Note that at this time the IWS provisioning tool does not support changing this initialization file. A text editor like Windows Notepad should be used to change this file. The Nortel Networks default version of this file is as follows:

```
The MSGEDIT.INI file contains various parameters
;that may be defined and used by the message editor window.
;
;
;Default_editor_mode
;===================
;Determines the mode that the message editor starts in when first
;displayed. This value can be 1, 2, or 3 where 1 = SMS,
;2 = E-mail, and 3 = DA printer.
;
;Next_editor_mode
;================
;Determines the mode that the message editor switches to when the
;Message Type softkey is pressed once. This value can be 0, 1, 2,
;or 3 where 0 = none, 1 = SMS, 2 = E-mail, and 3 = DA printer.
;0 means there is no second editor mode and thus the message
;editor just has one mode, the default editor mode.
;
;Next_next_editor_mode
;=====================
;Determines the mode that the message editor switches to when the
;Message Type softkey is pressed a second time. This value can be
;0, 1, 2, or 3 where 0 = none, 1 = SMS, 2 = E-mail, and
;3 = DA printer. 0 means there is no third editor mode. The message
;editor just has two modes, the default editor mode and the next
;editor mode.
;
;SMS_service_enable
;==================
;If set to 1, then SMS mode can only be accessed while in the
;datafilled SMS service. The SMS service number is designated by
;the SMS_service_number value. If SMS_service_enable is set to 0,
;then SMS mode can be accessed from any SMS supporting service.
;
;SMS_service_number
;==================
;The service number for SMS mode. This value is ignored if
```

```
;SMS_service_enable is set to 0. The range of values for this
;parameter is 0 to 62.
;
;Email_service_enable
;====================
;If set to 1, then E-mail mode can only be accessed while in the
;datafilled E-mail service. The E-mail service number is designated
;by the Email_service_number value. If Email_service_enable is set
;to 0, then E-mail mode can be accessed from any E-mail supporting
;service.
;
;Email_service_number
;====================
;The service number for E-mail mode. This value is ignored if
;Email_service_enable is set to 0. The range of values for this
;parameter is 0 to 62.
;
;Message_fill_char
;=================
;For some message formats, multiple occurences of this character
;in the listing are reduced to single occurences of this character.
;By default, this character is ".". When specifying this character,
;the single character must be placed in double quotes, e.g. ".".
;
;Number_of_leading_characters_to_be_removed
;==========================================
;For some message formats, a prefix is stripped from the listing
;supplied for the message. This parameter determines how many
;leading characters to strip off.
;
;Number_of_trailing_characters_to_be_removed
;===========================================
;For some message formats, a suffix is stripped from the text
;supplied for the message. This parameter determines how many
;trailing characters to strip off.
;
;SMS_auto_domain_&_msg_population
;===============================
;Determines what call information is used by the message editor
;to automatically fill in the SMS address's domain and which
;message template is used for the message text field. This value
;can be 0, 1, or 2. 0 means use the defaults for the SMS domain
;and message template. 1 means fill in the domain and message
;text fields based on the SPID-domain and SPID-template mappings
;found in IWS table file XMEDSPID.TBL. 2 means fill in the
;domain and message text fields based on the trunk group-domain
;and trunk group-template mappings found in IWS table file
;XMEDTG.TBL. Default = 0.
;
;SMS_username_read_only
;======================
;If set to 1, then the SMS address username field is read only.
;Thus, SMS messages can only be sent to a username based on the
;calling number. If set to 0, then the operator can enter any
;SMS address username. If the SMS_domain_read_only parameter is
;also set to 0, then the operator can send an SMS message to any
;SMS device.
;
;SMS_domain_read_only
```

```
;====================
;If set to 1, then the SMS address domain field is read only.
;Thus, SMS messages can only be sent to the datafilled default
;SMS domain, or a domain datafilled in the SMS domain menu.
;If set to 0, then the operator can enter any SMS address
;domain. If the SMS_username_read_only parameter is also set
;to 0, then the operator can send an SMS message to any SMS
;device. Note: for the default SMS domain see the XMESMSDM.TBL
;file.
;
;Email_auto_msg_population
;=========================
;Determines what call information is used by the message editor
;to automatically determine which message template is used for
;the message text field. This value can be 0, 1, 2, or 3. 0
;means use the default for the message template. 1 means fill
;in the message text field based on the SPID-template mappings
;found in IWS table file XMEDSPID.TBL. 2 means fill in the
;message text field based on the trunk group-template mappings
;found in IWS table file XMEDTG.TBL. 3 means fill in the message
;text field with the current Windows clipboard contents. For
;NTDA, the contents of the clipboard is a text screen dump.
;Default = 3.
;
;Email_username_read_only
;========================
;If set to 1, then the E-mail address username field is read only.
;Thus, E-mail messages can only be sent to the datafilled default
;E-mail username or to a username datafilled in the E-mail names
;menu. If set to 0, then the operator can enter any E-mail address
;username. If the Email_domain_read_only parameter is also set to
;0, then the operator can send an E-mail to any user.
;
;Email_domain_read_only
;======================
;If set to 1, then the E-mail address domain field is read only.
;Thus, E-mail messages can only be sent to the datafilled default
;E-mail domain, to a domain datafilled in the E-mail names menu,
;or to a domain datafilled in the E-mail domain menu. If set to 0,
;then the operator can enter any E-mail address domain. If the
;Email_username_read_only parameter is also set to 0, then the
;operator can send an E-mail to any user.
;
;DA_printer_maximum_message_length
;=================================
;Determines the DA Printer mode's maximum message length.
;
;DA_printer_default_address
;==========================
;Determines the initial DA printer address. This text string can
;be any alphanumeric string upto 9 characters in length, but is
;usually 0 which is short for "lp0". The default address is
;"0". When specifying this address, the text must be placed in
;double quotes, e.g. "1".
;
;DA_printer_address_field_read_only
;==================================
;If set to 1, then the DA printer address field is read only.
;Thus, DA print outs can only be sent to the datafilled default
```

```
;printer address. If set to 0, then the operator can enter any
;DA printer address.
;
;Number_not_available
;====================
;The text string substituted into the message templates when
;the requested number is not available. The maximum length
;of this string is 32 characters. The default string is
;"not available". When specifying this text string, the string
;must be placed in double quotes, e.g. "not found". The
;default string for this entry is "not available".
;
;Number_not_published
;====================
;The text string substituted into the message templates when
;the requested number is not published. The maximum length
;of this string is 32 characters. The default string is
;"not published". When specifying this text string, the string
;must be placed in double quotes, e.g. "not found". The
;default string for this entry is "not published".
;
;Restrict_not_published_numbers
;==============================
;Setting this parameter to 1 will initialize the body of the
;message to the "Not_published_string". Setting this parameter
;to 0 will initialize the body of the message to the abbreviated
;listing. The default value is 1.
;
;Not_published_string
;====================
;When "Restrict_not_published_numbers" is set to 1, the body of
;the message is initialized to this string. The maximum length
;of this string is 255 characters. As with all entries, this
;entry must be on a single line in this file. Also when specifying
;this text string, the string must be placed in double quotes.
;The default string for this entry is "At the customer's request,
;the number is not published and is not listed in our records."
;
[MESettings]
Default_editor_mode = 1
Next_editor_mode = 2
Next_next_editor_mode = 3
SMS_service_enable = 0
SMS_service_number = 3
Email_service_enable = 0
Email_service_number = 4
Message_fill_char = "."
Number_of_leading_characters_to_be_removed = 5
Number_of_trailing_characters_to_be_removed = 0
SMS_auto_domain_&_msg_population = 0
SMS_username_field_read_only = 0
SMS_domain_field_read_only = 0
Email_auto_msg_population = 3
Email_username_field_read_only = 0
Email_domain_field_read_only = 0
DA_printer_maximum_message_length = 3000
DA_printer_default_address = "0"
DA_printer_address_field_read_only = 0
Number_not_available = "not available"
```

```
Number_not_published = "not published"
Restrict_not_published_numbers = 1
Not_published_string = "At the customer's request, the number is not published
and is not listed in our records."
;
```

8.12.1.2 MESFY.LNG

This language datafill file contains all the message editor softkey labels. It is located in the IWS datafill directory, e.g. C:\MPXBASE\DATAFILL. The operating company can customize this text file. For example, the operating company may want to use different abbreviations for the message editor functions that these softkeys represent, or the operating company may want to change the labels from English to Spanish. This softkey language file applies to the message editor in all three modes; SMS, E-mail, and DA Printer. The Nortel Networks default message editor softkey language file is as follows:

```
;MESFY
;The preceding line is used by ProvTool, DO NOT REMOVE!
;+
; ----------------------------------------------------------
; Language File Name: mesfy.lng
; ----------------------------------------------------------
;
;  Description:
;  ------------
;     Message Editor Window Softkeys Language File
;
;     This language file supplies the sixteen softkey labels
;     for the message editor. Note that some labels are not
;     applicable to all the message editor modes. For example,
;     the trouble menu softkey label, label 14, is only
;     applicable to E-mail mode and DA printer mode.
;
;     Softkey     Softkey index, 0 to 15.
;     ID
;
;     Softkey     Text string to display as softkey
;     Label       label, 7 characters max.
;
;-
;
;  Note:
;  -----
;     String lengths of datafill lines should not exceed 80 characters.
;     The help text (between ";+" and ";-") should not exceed 60 chars.
;
;
;    Softkey       Softkey
;      ID           Label
;    -------       -------
;
        00          "EditFld"
        01          "MsgType"
        02          "ClrNam"
        03          "ClrMsg"
        04          "Lst2Msg"
        05          "RN2Msg"
```

```
        06          "PrvMenu"
        07          "SendMsg"
        08          "Msg2Cb"
        09          "NamMenu"
        10          "ClrAddr"
        11          "ClrPrv"
        12          "Cb2Msg"
        13          "Clg2Nam"
        14          "TrbMenu"
        15          "CancMsg"
;
; end of data
;
```

8.12.2 ME.LNG

The message editor general language file contains the text labels found in the message editor window, message editor error messages, and other miscellaneous message editor text strings. The message editor softkeys labels are in a separate IWS language file. The ME.LNG file is located in the IWS datafill directory, e.g. C:\MPXBASE\DATAFILL. The operating company can customize this text file. For example, the operating company may want the labels to appear in Spanish. The Nortel Networks default message editor general language file is as follows:

```
;ME
;The preceding line is used by ProvTool, DO NOT REMOVE!
;+
; ----------------------------------------------------------
;  Language File Name:  me.lng
; ----------------------------------------------------------
;
;  Description:
;  ------------
;      Message Editor General Language File
;
;      This language file supplies labels for the text
;      displays in the message editor window. This file
;      also provides message editor error and information
;      text.
;
;-
;
;  Note:
;  -----
;      String lengths of datafill lines should not exceed 80 characters.
;      The help text (between ";+" and ";-") should not exceed 60 chars.
;
;
;String
;  ID              Text
;------    -------------------
;
; Message editor window titles
;  - max string length 35 characters
;
00 "Short Message Editor - E-mail"
01 "Short Message Editor - DA Printer"
```

```
02 "Short Message Editor - SMS"
;
;
; "Message Destination Address" group
;  - max string length 28 characters
;
03 "Message Destination Address"
;
;
; "Address" field
;  - max string length 7 characters
;
04 "Address"
;
;
; "Username" field
;  - max string length 4 characters
;
05 "Name"
;
;
; "Domain" field
;  - max string length 8 characters
;
06 "Provider"
;
;
; "Message status" field
;  - max string length 15 characters
;
07 "Message status"
;
;
; "Message body" group
;  - max string length 13 characters
;
08 "Message body"
;
;
; "Troubles" menu
;  - max string length 9 characters
;
09 "Troubles"
;
;
; "Selected listing" field
;  - max string length 17 characters
;
10 "Selected listing"
;
;
; "Message to be sent" field
;  - max string length 19 characters
;
11 "Message to be sent"
;
;
; "Maximum number of characters allowed in msg" field
;  - max string length 3 characters
```

```
;
12 "Max"
;
;
; "Current number of characters in msg" field
;  - max string length 3 characters
;
13 "Cur"
;
;
; Missing domain error message
;  - max string length 72 characters
;
14 "Send Message Error: No domain specified. Please supply a domain."
;
;
; Missing username error message
;   - max string length 72 characters
;
15 "Send Message Error: No username specified. Please supply a username."
;
;
; Missing address error message
;   - max string length 72 characters
;
16 "Send Message Error: No address specified. Please supply an address."
;
;
; Missing message text error message
;   - max string length 72 characters
;
17 "Send Message Error: No message specified. Please supply a message."
;
;
; Message text too long error message
;   - max string length 72 characters
;
18 "Send Message Error: Please shorten the message to %d or less characters."
;
;
; Windows clipboard data not available to copy message body
;   - max string length 72 characters
;
19 "Clipboard to message: Clipboard data not available."
;
;
; Unexpected error condition: Could not open the Windows clipboard
;   - max string length 72 characters
;
20  "Clipboard to message: Unable to open clipboard."
;
;
; Unexpected error condition: Clipboard pointer error
;   - max string length 72 characters
;
21  "Clipboard to message: Clipboard pointer error."
;
;
; Unexpected error condition: Unable to get clipboard data
```

```
;  - max string length 72 characters
;
22  "Clipboard to message: Unable to get clipboard data."
;
;
; Unexpected error condition: Unable to close the clipboard
;  - max string length 72 characters
;
23  "Clipboard to message: Unable to close the clipboard."
;
;
; Unexpected error condition: Unable to open the clipboard
;  - max string length 72 characters
;
24  "Message to clipboard: Unable to open the clipboard."
;
;
; Unexpected error condition: Unable to empty the clipboard
;  - max string length 72 characters
;
25  "Message to clipboard: Unable to empty the clipboard."
;
;
; Unexpected error condition: Unable to allocate memory object
;  - max string length 72 characters
;
26  "Message to clipboard: Unable to allocate memory object."
;
;
; Unexpected error condition: Unable to close the clipboard
;  - max string length 72 characters
;
27  "Message to clipboard: Unable to close the clipboard."
;
; Error message for when the operator tries to access the SMS
; mode in a non SMS service or when the operator tries to
; access the E-mail mode in a non E-mail service.
;  - max string length 35 characters
;
28  "Not valid for this service"
;
; Information message indicating the message body has been
; copied to the Windows clipboard.
;  - max string length 35 characters
;
29  "Message copied to clipboard"
;
; Information message indicating the Windows clipboard has been
; copied to the message body.
;  - max string length 35 characters
;
30  "Clipboard copied to message"
;
; end of data
;
```

8.12.3 XMEMSG.TBL

The XMEMSG.TBL table file contains message text templates and is located in the IWS datafill directory, e.g. C:\MPXBASE\DATAFILL. The purpose of these test templates is to minimize the typing that the operator has to do in the message text field. The templates normal use is for the SMS call scenario where a cell phone customer wants the requested phone number sent back to his or her phone, but this language file can be used for both the SMS and E-mail message editor modes. This file is not applicable to the DA Printer mode. The message templates can be used to brand messages, for example, "The number is 123-4567. Thank you all for using BucTel.".

Per message editor initialization file datafill, a text template can be automatically selected based on call SPID or call trunk group. Template 0 is the default template and is used when a SPID or trunk group does not map to a template or when this automatic template feature is disabled per datafill. If the automatic template feature is enabled, these templates are referenced by datafill files XMEDSPID.TBL or XMEDTG.TBL, whichever is applicable. The XMEDSPID.TBL table file is referenced when the call SPID determines the message template. The XMEDTG.TBL table file is referenced when the call trunk determines the message template.

The string "%s" should appear somewhere in each template so that the message editor can automatically replace this string with the requested number. If the number is not available, e.g. missing from the listing, then the "%s" is replaced by the datafilled 'not available' string found in the message editor initialization file. If the number is not published, then the "%s" is replaced by the datafilled 'not published' string found in the message editor initialization file.

After the template based text appears in the message field, the operator can edit the message text if needed.

The Nortel Networks default version of the message template datafill file is as follows:

```
;XMEMSG
;The preceding line is used by ProvTool, DO NOT REMOVE!
;+
; --------------------------------------------------------
; Language File Name: xmemsg.tbl
; --------------------------------------------------------
;
;  Description:
;  ------------
;      Message Editor Message Template Table File
;
;      This table file is used for both the SMS and E-mail editor
;      modes. This file supplies message templates for the message body.
;      A maximum of 101 message templates are supported. Template 0 is
;      the default template. These templates are referenced by datafill
;      files XMEDSPID.TBL or XMEDTG.TBL, if applicable. These templates
;      are usually used for branded messages, for example,
;      "The number is 123-4567. Thank you for using ACME Telco".
;
;      If the requested number is published and not zero length, the
;      characters "%s" if they exist, are automatically replaced with
;      the unformatted requested number.
;
```

```
;       If the requested number is non-published, the message editor
;       replaces "%s" with the not published datafill string found in
;       the message editor initialization file, MSGEDIT.INI.
;
;       If the requested number is published and zero length, the
;       message editor replaces "%s" with the not available datafill
;       string found in the message editor initialization file,
;       MSGEDIT.INI.
;
;  Fields:
;  -------
;     Template ID       Identifier associated with each template,
;                       range 0 - 100.
;
;     Message template  Template string used for body of message.
;                       The string length is 1 to 74 characters.
;
;  Disclaimer:
;  -----------
;     The example message templates listed below are just that, examples.
;     Nortel Networks does not suggest that these templates be used.
;
;-
;
;  Note:
;  -----
;     String lengths of datafill lines should not exceed 80 characters.
;     The help text (between ";+" and ";-") should not exceed 60 chars.
;
;
;   Template ID    Message template
;   -----------    ----------------
;
00 "The number is %s. Thank you for using our message service."
01 "The number is %s. Thank you for using AirTouch Cellular."
02 "The number is %s. Thank you for using Alltel."
03 "The number is %s. Thank you for using Ameritech Cellular."
04 "The number is %s. Thank you for using AT&T Wireless."
05 "The number is %s. Thank you for using Bell Atlantic."
06 "The number is %s. Thank you for using BellSouth."
07 "The number is %s. Thank you for using Cingular Wireless."
08 "The number is %s. Thank you for using Comcast Cellular."
09 "The number is %s. Thank you for using GTE Wireless."
10 "The number is %s. Thank you for using Nextel."
11 "The number is %s. Thank you for using Omnipoint."
12 "The number is %s. Thank you for using PacificBell."
13 "The number is %s. Thank you for using PrimeCo."
14 "The number is %s. Thank you for using Sky Tel."
15 "The number is %s. Thank you for using Southwestern Bell."
16 "The number is %s. Thank you for using Sprint."
17 "The number is %s. Thank you for using Suncom."
18 "The number is %s. Thank you for using Telecorp."
19 "The number is %s. Thank you for using Tritel."
20 "The number is %s. Thank you for using Triton PCS."
21 "The number is %s. Thank you for using U.S. West."
22 "The number is %s. Thank you for using Verizon."
23 "The number is %s. Thank you for using Voicestream."
24 "The number is %s. Thank you for using WebLink Wireless."
; end of data
```

8.12.3.1 XMESMSDM.TBL

This datafill file contains the message editor SMS domain entries. It is located in the IWS datafill directory, e.g. C:\MPXBASE\DATAFILL. A maximum of 101 SMS domain entries are supported. Carrier names for entries 1 through 26 will appear in the SMS domain menu. Entry 0 is the default SMS domain. Any of the domains, entries 0 through 100, can be referenced by the SPID or trunk group table files for the automatic SMS domain selection feature. Table entries must be continuous from 0 to the last entry. The Nortel Networks default version of this datafill file is as follows:

```
;XMESMSDM
;The preceding line is used by ProvTool, DO NOT REMOVE!
;+
;  ----------------------------------------------------------
;  Table:  XMESMSDM.TBL
;  ----------------------------------------------------------
;
;  Description:
;  ------------
;      Message Editor SMS Domain Table
;
;      This datafill table lists SMS providers and their
;      domains. A maximum of 101 domain entries are allowed,
;      but only domains 1 through 26 are shown in the SMS
;      domain menu. Domain 0 is the default domain. If the
;      default domain is to appear in the domain menu, then
;      it must also be datafilled as one of the domains, 1
;      to 26. The carrier tags (provider names) listed below
;      are the text strings that will appear in the SMS
;      domain menu. Domains 1 to 26 will appear is the SMS
;      domain menu is the same order as listed below.
;      Indexes must be continuous starting with index 0.
;      Domains 27 through 100 do not appear in the domain
;      menu. Domains 27 through 100 are only referenced
;      by entries in the XMEDSPID.TBL and XMEDTG.TBL
;      tables files.
;
;  Fields:
;  -------
;      Index           Index for listing SMS providers and their
;                      domains, range 0 - 100.
;
;      Domain          The domain text string. The string
;      Name            length is 0 to 25 characters.
;
;      Carrier         The carrier name associated with the domain.
;      Tag             This is the text string that will appear in
;                      the SMS domain menu in the message editor.
;                      The string length is 0 to 25 characters.
;
;      Maximum         For the given domain, specifies the
;      Characters      maximum number of text characters allowed
;      Allowed         in the body of the SMS message. The
;                      range for this value is 1 to 255.
;
;  Disclaimer:
;  -----------
;      The example domains listed below are just that, examples.
```

```
;      Nortel Networks does claim that any of these domains should
;      or could be used.
;
;-
;  Notes:
;  -----
;      String lengths of datafill lines should not exceed 80 characters.
;
;
;
;  Index   Domain   Carrier   Maximum
;          Name     Tag       Characters
;                             Allowed
;  ------   ------   -------   ----------
0 "smsdefaultdomain.com" "SMS Default Domain" 100
1 "smsdefaultdomain.com" "SMS Default Domain" 100
2 "airtouchpaging.com" "AirTouch Cellular" 100
3 "alltelmessage.com" "Alltel" 100
4 "paging.acswireless.com" "Ameritech Cellular" 100
5 "mobile.att.net" "AT&T Wireless" 100
6 "message.bam.com" "Bell Atlantic" 100
7 "wireless.bellsouth.com" "BellSouth" 100
8 "mobile.mywireless.com" "Cingular Wireless" 100
9 "cellularone.tstmsg.com" "Comcast Cellular" 100
10 "messagealert.com" "GTE Wireless" 100
11 "messaging.nextel.com" "Nextel" 100
12 "omnipointpcs.com" "Omnipoint" 100
13 "pacbellpcs.com" "PacificBell" 100
14 "primeco.textmessage.com" "PrimeCo" 100
15 "skytel.com" "Sky Tel" 100
16 "email.swbw.com" "Southwestern Bell" 100
17 "messaging.sprintpcs.com" "Sprint" 100
18 "mobile.att.net" "Suncom" 100
19 "mobile.att.net" "Telecorp" 100
20 "mobile.att.net" "Tritel" 100
21 "mobile.att.net" "Triton PCS" 100
22 "uswestdatamail.com" "U.S. West" 100
23 "msg.myvzw.com" "Verizon" 100
24 "voicestream.net" "Voicestream" 100
25 "airmessage.net" "WebLink Wireless" 100
;
```

8.12.4 XMEEMLDM.TBL

This datafill file contains the message editor E-mail domain entries. It is located in the
IWS datafill directory, e.g. C:\MPXBASE\DATAFILL. A maximum of 27 E-mail domain
entries are supported. The domain provider names for entries 1 through 26 will appear in
the E-mail domain menu. Entry 0 is the default E-mail domain. Table entries **must** be
continuous from 0 to the last entry. The Nortel Networks default version of this datafill file
is as follows:

```
;XMEEMLDM
;The preceding line is used by ProvTool, DO NOT REMOVE!
;+
;  ------------------------------------------------------------
;  Table:  XMEEMLDM.TBL
;  ------------------------------------------------------------
```

```
;
;  Description:
;  ------------
;      Message Editor E-mail Domains Table
;
;      This datafill table lists E-mail domains. A maximum
;      of 26 domain entries are allowed. These domains are
;      shown in the E-mail domain menu. The domain providers'
;      names listed below are the text strings that will
;      appear in the E-mail domain menu. Domains 1 to 26
;      will appear in the E-mail domain menu in the same
;      order as listed below. Indexes must be continuous
;      starting with index 1.
;
;  Fields:
;  -------
;      Index              Index for listing E-mail domain
;                         providers and their domains,
;                         range 1 - 26.
;
;      Domain             The domain text string 1 to 25
;      Name               characters in length.
;
;      Domain             The carrier name associated with the
;      Provider           domain. This is the text string that
;      Name               will appear in the domain menu. It
;                         must be 1 to 25 characters in length.
;
;      Maximum            For the given domain, specifies
;      Characters         the maximum number of text characters
;      Allowed            characters allowed in the body of the
;                         E-mail message. The range for this
;                         value is 1 to 3000.
;
;  Disclaimer:
;  -----------
;      The example domains listed below are just that, examples.
;      Nortel Networks does claim that these domains should or
;      could be used.
;
;-
;  Notes:
;  -----
;      String lengths of datafill lines should not exceed 80 characters.
;
;
;  Index      Domain   Domain      Maximum
;             Name     Provider    Characters
;                      Name        Allowed
;  ------     ------   --------    ----------
1 "mytelco.com" "MyTelCo" 3000
2 "aol.com" "AOL" 3000
3 "msn.com" "Microsoft" 3000
4 "wolfenet.com" "WolfENet" 3000
5 "verizon.net" "Verizon" 3000
6 "bellsouth.net" "Bell South" 3000
7 "ctc.net" "Concord Tel" 3000
8 "sbc.com" "SBC" 3000
9 "earthlink.net" "Earthlink" 3000
```

```
10 "sprintmail.com" "Sprint" 3000
11 "nc.rr.com" "NC.RR" 3000
12 "att.net" "ATT" 3000
13 "compuserve.com" "Compuserve" 3000
14 "mindspring.com" "Mindspring" 3000
;
```

8.12.4.1 XMEDSPID.TBL

If SMS mode is enabled, this datafill file maps call SPIDs to SMS domains for automatic domain field population, and maps call SPIDs to message templates for automatic message text field population. If E-mail mode is enabled, this datafill file only maps call SPIDs to message templates for automatic message text field population. Up to 250 SPID based tuples may be listed. This file is located in the IWS datafill directory, e.g. C:\MPXBASE\DATAFILL. The Nortel Networks default version of this datafill file is as follows:

```
;XMEDSPID
The preceding line is used by ProvTool, DO NOT REMOVE!
;+
; -------------------------------------------------------------
;  Table:  XMEDSPID.TBL
; -------------------------------------------------------------
;
; Description:
; ------------
;    Message Editor SPID Mapping Table
;
;    For SMS mode, if enabled this datafill file maps call
;    SPIDs to SMS domains for automatic domain field
;    population, and maps call SPIDs to message templates
;    for automatic message text field population. For E-mail
;    mode, if enabled this datafill file only maps call SPIDs
;    to message templates for automatic message text field
;    population. In E-mail mode there is no mapping of SPIDs
;    to E-mail domains. A maximum of 250 tuples are allowed
;    in this table.
;
; Fields:
; -------
; Table Index          Table Index, range 0-249.
;
; SPID                 The Service Provider ID, any
;                      combination of 4 to 6 alphanumeric
;                      characters.
;
; SMS Domain Index     Domain index as found in the
;                      XMESMSDM.TBL table file,
;                      range 0 - 100.
;
; Message Template Index Template index as found in the
;                      XMEMSG.TBL file, range 0-100.
;
;
; Comments:
; ---------
;    The SPIDs in this table must correspond to those datafilled in DMS
```

```
;       table SPID.
;
;-
;  Notes:
;  -----
;     1). String lengths of datafill lines should not exceed 80 characters.
;
;
;                     SMS        Message
;  Table              Domain     Template
;  Index      SPID    Index      Index
; --------  --------  --------  --------
   0         "SID0"   1          1
   1         "NEWP"   2          2
   2         "SID2"   3          3
   3         "SPI0"   4          4
   4         "SPI1"   5          5
   5         "SPI2"   6          6
   6         "TELCOM" 7          7
;
```

8.12.4.2 XMEEMLNM.TBL

For E-mail mode, this datafill file lists E-mail nicknames and their corresponding E-mail
addresses. This file is located in the IWS datafill directory, e.g.
C:\MPXBASE\DATAFILL. The Nortel Networks default version of this datafill file is as
follows:

```
;XMEEMLNM
;The preceding line is used by ProvTool, DO NOT REMOVE!
;+
; ------------------------------------------------------------
;  Table:  XMEEMLNM.TBL
; ------------------------------------------------------------
;
;  Description:
;  ------------
;     Message Editor E-mail Names (Addresses) Table
;
;     This datafill table lists names and their associated
;     E-mail addresses. The E-mail address is broken down
;     into the E-mail username and E-mail domain. A maximum
;     of 27 name entries are allowed. Names 1 through 26 are
;     shown in the E-mail names menu. Name 0 is the default
;     E-mail name. Domain 0 is the default E-mail domain. If
;     the default name is to appear in the names menu, then
;     it must also be datafilled as one of the names, 1 to
;     26. Names 1 through 26 will appear in the E-mail name
;     menu in the same order as listed below. Indexes must
;     be continuous starting with index 0.
;
;
;  Fields:
;  -------
;     Index              Index for listing E-mail names,
;                        range 0 - 26.
;
;     Name               Nickname, alias, tag, ... associated
```

```
;                                   with the given E-mail username and
;                                   domain. Appears in the name menu. The
;                                   string length is 1 to 8 characters.
;
;       E-mail             E-mail username associated with the
;       Username           name. This is the text string before
;                          the @ character in the E-mail address.
;                          The string length is 1 to 25
;                          characters.
;
;       E-mail             E-mail domain associated with the
;       Provider's         name. This is the text string after
;                          the @ character in the E-mail address.
;                          The string length is 1 to 25
;                          characters.
;
;       Maximum            For the given E-mail address, specifies
;       Characters         the maximum number of text characters
;       Allowed            characters allowed in the body of the
;                          E-mail message. The range for this
;                          value is 1 to 3000.
;
;   Disclaimer:
;   -----------
;       The example domains listed below are just that, examples.
;       Nortel Networks does claim that these domains should or
;       could be used.
;
;-
;   Notes:
;   -----
;       String lengths of datafill lines should not exceed 80 characters.
;
;
;   Index     Name      E-mail      E-mail        Maximum
;                       Username    Provider's    Characters
;                                   Domain        Allowed
;   ------    ------    --------    ----------    ----------
0 "Boss" "wig" "mytelco.com" 3000
1 "Boss" "wig" "mytelco.com" 3000
2 "Big Boss" "bigwig" "mytelco.com" 3000
3 "John" "johnsmith" "mytelco.com" 3000
4 "Jane" "janesmith" "mytelco.com" 3000
5 "Curt" "CurtS" "some.com" 3000
6 "Randy" "randyj" "some.com" 3000
7 "Jay" "jbell" "some.com" 3000
8 "Alex" "alexrod" "some.com" 3000
9 "Jetter" "thejet" "some.com" 3000
10 "Barney" "brubble" "some.com" 3000
11 "Jethro" "jethrobodene" "some.com" 3000
12 "Theodore" "tcleaver" "other.com" 3000
13 "Fred" "freddyboy" "other.com" 3000
14 "Red" "green" "any.com" 3000
15 "Wilma" "flintstones" "any.com" 3000
16 "Alice" "goask" "any.com" 3000
;
```

8.12.4.3 XMEDTG.TBL

If SMS mode is enabled, this datafill file maps call trunk groups and switch IDs to SMS domains for automatic domain field population, and maps call trunk groups and switch IDs to message templates for automatic message text field population. If E-mail mode is enabled, this datafill file only maps call trunk groups and switch IDs to message templates for automatic message text field population. This file is located in the IWS datafill directory, e.g. C:\MPXBASE\DATAFILL. The Nortel Networks default version of this datafill file is as follows:

```
;XMEDTG
;The preceding line is used by ProvTool, DO NOT REMOVE!
;+
;   -----------------------------------------------------------
;   Table:  XMEDTG.TBL
;   -----------------------------------------------------------
;
;   Description:
;   ------------
;       Message Editor Trunk Group Mapping Table
;
;       For SMS mode, if enabled this datafill file maps call
;       trunk groups and switch IDs to SMS domains for automatic
;       domain field population. For SMS mode, it also maps call
;       trunk groups and switch IDs to message templates for
;       automatic message text field population. For E-mail mode,
;       if enabled this datafill file maps call trunk groups
;       and switch IDs to message templates for automatic message
;       text field population. In E-mail mode there is no mapping
;       to E-mail domains. A maximum of 250 tuples are allowed in
;       this table.
;
;   Fields:
;   -------
;       Table Index           Table Index, range 0 - 249.
;
;       Switch ID             The originating switch ID,
;                             range 0 - 31.
;
;       Trunk Group           The originating trunk group
;       Display Index         display index, range 1 - 254.
;
;       SMS Domain Index      Domain index as found in the
;                             XMESMSDM.TBL table file,
;                             range 0 - 100.
;
;       Message Template Index Template index as found in the
;                             MEMSG.LNG file, range 0 - 100.
;
;
;   Note:
;   -----
;       The switch ID in this table must correspond to those
;       datafilled in DMS table OCOFC.
;       The trunk group ID in this table must correspond to those
;       datafilled in DMS table TOPSDISP.
;
;-
```

```
;  Notes:
;  -----
;      String lengths of datafill lines should not exceed 80 characters.
;
;
;                  Trunk
;                  Group   SMS     Message
; Table  Switch   Display Domain  Template
; Index  ID       Index   Index   Index
; -----  ------   -----   ------  -------
   0      0        1       1       1
   1      0        2       2       2
   2      1        1       3       3
   3      1        2       4       4
   4      2        1       5       5
   5      2        2       6       6
   6      2        3       7       7
   7      2        4       8       8
   8      2        5       9       9
;
;
```

8.12.4.4 XMETRB.TBL

This datafill file contains the message editor trouble menu entries. It is located in the IWS datafill directory, e.g. C:\MPXBASE\DATAFILL. It supports up to 26 trouble menu entries. Table entries must be continuous from 1 to the last entry. The Nortel Networks default version of this datafill file is as follows:

```
;XMETRB
;The preceding line is used by ProvTool, DO NOT REMOVE!
;+
; -----------------------------------------------------------
;  Table:  XMETRB.TBL
; -----------------------------------------------------------
;
;  Description:
;  -----------
;      Message Editor Trouble Menu Table
;
;      This datafill table lists the troubles that are to be
;      shown in the message editor's trouble menu. The trouble
;      is enable in E-mail mode and DA Printer mode.A maximum
;      of 26 trouble entries are allowed. There is no default
;      trouble entry. The troubles will appear in the menu
;      sorted by index starting with the lowest index, 1.
;      Indexes must be continuous starting with index 1.
;
;  Fields:
;  -------
;      Index         Index for listing troubles, range 1 - 26.
;
;      Trouble       The trouble text string. The string
;      Text          length is 1 to 70 characters.
;
;  Notes:
;  ------
;      1) The example troubles listed below are just that, examples.
```

```
;      Nortel Networks does claim that these troubles should or
;      could be used.
;
;      2) This message editor trouble menu is not associated with the
;      IWS trouble menu or DMS TOPS trouble codes.
;
;-
;  Notes:
;  -----
;      String lengths of datafill lines should not exceed 80 characters.
;
;
;
;  Index    Trouble
;           Text
;  ------   -------
1  "Trouble code A"
2  "Trouble code B"
3  "Trouble code C"
4  "Trouble code D"
5  "Trouble code E"
6  "No trouble"
7  "Little trouble"
8  "Big trouble"
9  "Listing has wrong address"
10 "Listing has wrong number"
11 "Sirname is incorrect"
12 "Firstname is incorrect"
13 "Street number is incorrect"
14 "Trouble code 14"
15 "Trouble code 15"
16 "Trouble code 16"
17 "Trouble code 17"
18 "Trouble code 18"
;
```

8.12.4.5 XKBOARD.TBL (Keybind & Message Editor key actions)

As mentioned previously, IWS generic key actions have been added for message editor support.

Using the IWS Keybind tool, at least one of the following key actions must be mapped to a physical key in order to bring up the message editor:

- *Message Editor* - Activates the message editor in the datafilled default mode.

- *Message Editor - SMS* - Activates the message editor in SMS mode.

- *Message Editor - E-mail* - Activates the message editor in E-mail mode.

- *Message Editor - DA Printer* - Activates the message editor in DA printer mode.

Another key action:

- *Copy screen to clipboard* - Can be implemented by various applications to copy text screen information into the Windows clipboard. With IWS release 17, only NTDA supports this key action.

8.12.5 NTDA Datafill

After installing IWS17, the NTDA datafill may have to be updated as appropriate. There is one NTDAINI.INI parameter related to this feature and the Message Editor. This parameter is "MessageEditorCopyToClipboard". The customer or installer should set this parameter as appropriate.

8.12.5.1 NTDAINI.INI

This initialization file is located in the Windows directory, e.g. C:\WINDOWS. It has miscellaneous settings for the NTDA application. A section, "MessageEditor", and parameter, "MessageEditorCopyToClipboard", have been added to this NTDA initialization file.

The Nortel Networks default version of this file follows. Note the section and parameter.

```
;
; ********************************terminal********************************
; This comment section describes the variables that may be datafilled in
; the [terminal] section.
;
; Toggle_Selected_Listing
;   The Toggle_Selected_Listing flag indicates if Selected Listing should be
;   toggled when the line designator is selected a second time.
;   Possible values - TRUE or FALSE
;
; Blink_Timer
;   The Blink_Timer datafill controls how often file searched indicators blink.
;   This value can be between 0 and 3000 milliseconds.
;
; Listings_Display_Scheme
;   The Listings_Display_Scheme variable indicates how colors should be used when
;   displaying the listings. The possible options are listed below.
;   NONE                - Don't do anything
;   FOREGROUND          - Alternate the foreground color of each listing
;   BACKGROUND          - Alternate the background color of each listing
;   SELECTED_AUDIO      - When a listing is selected for audio, highlight it
;   DATABASE_HIGHLIGHT  - Allow the database to specify highlighting (D1 1.04.1+)
;
; Red_Top_Line
;   This variable indicates if all top lines should be displayed as red.
;   Options are TRUE or FALSE
;
; Gray_NP
;   This variable indicates if the foreground color of all Non-Published Numbers
;   should be gray. Options are TRUE or FALSE
;
; NP_Name
;   Set this flag equal to the string which displays for non published number
;   for single line release to audio to work with non pubs.  e.g. NonPub
;
; ServiceChangeFlag
;   This flag determines how NT DA service changes
;    0 = Always to the switch
;    1 = To the GWY if line designator; to switch otherwise
;    2 = Always to the GWY
```

```
;
;  MSA_Order
;  Input_Zone_Order
;  Listings_Order
;    The next three variables determine how the screen will appear to the user
;    Each section (Listings, MSA, & Input Zone) has a number associated with it.
;    These numbers determine the order of the sections on the screen. The numbers
;    must range from 1 to 3.
;          e.g ;  MSA_Order=1
;                 Input_Zone_Order=2
;                 Listings_Order=3
;
;  OrderNamesBySize
;    Order the three name fields by size (# chars) on RES searches.  Possible
;    values - TRUE or FALSE
;
;  DisableFieldOverfill
;    Allow/disallow field overtyping (if TRUE, will beep if field is full
;    and operator attempts to type more characters into it, FALSE will allow
;    the field to overfill and characters will scroll in the input window)
;
;  ClearFieldOnEdit
;  TruncateFieldOnTab
;  TruncateFieldOnSearch
;    DA Input Field characteristics.  Possible field values for each of the
;    above - TRUE or FALSE
;
;  Call_Arrival_Cursor_Position
;    This option overrides the DA database's default call arrival cursor location
;    with the default location for the workstation.
;     Call_Arrival_Cursor_Position Values:
;     0 - DA database controls cursor position at call arrival
;     1 - Cursor positioned in the Name1 field at call arrival
;     2 - Cursor positioned in the Street1 field at call arrival
;     3 - Cursor positioned in the Locality field at call arrival
;     4 - Cursor positioned in the Area1 field at call arrival
;
;  Softkey_Cursor_Position
;    When set to TRUE, this option causes the cursor to automatically move to
;    the Name1 field when a locality softkey is pressed. When set to FALSE, on
;    softkey press the cursor position does not change if the cursor is in the
;    Name1, Name2, Name3, Street1, or Street2 field. If the cursor is in the
;    Locality, Area1, or Area2 field, then the cursor is repositioned to the
;    Name1 field.
;
;  Alternate Language Indicators
;    Language1  (primary)
;    Language2  (secondary)
;    e.g.  E for English, S for Spanish
;
;  DA Input Fields
;    Set order of DA input fields
;    All values are integers in 10th of a character cell
;    For example 100 is Column 10
;       DAField1Col=32
;       DAField2Col=127
;       DAField3Col=222
;       .
;       .
```

```
;        .
;
;  DA Input Field Labels
;      Datafilling these variables with a 2 character string will provide
;      the labels for the Name, Street, Location and Area input fields on
;      the DA screen
;       e.g.
;          DALabel1Txt=Nm
;          DALabel2Txt=St
;          DALabel3Txt=Lo
;          DALabel4Txt=Ar
;
;  Colors for NTDA Screen Areas
;      These NTDA color attributes specify the fixed colors of various
;      NTDA Screen areas. If these color attributes are not set to the
;      NTDA "Default" value, the screen color is determined by the
;      Red, Green, and Blue values listed, e.g.
;          ColorListingText=0,128,0
;          ColorListingBackground=Default
;          ColorMSAText=128,128,128
;          ColorMSABackground=Default
;             .
;             .
;             .
;
;  Billing_Incomplete_Switch
;      Billing_Incomplete_Switch Values:
;      0 - Message indicating billing incomplete is displayed in the msa
;      1 - automaticly switch to the billing screen when billing is incomplete
;      2 - same as 1 except does not switch when the Requested Number is missing
;
;  International
;      International set to FALSE restricts NTDA topline data entry to ASCII
;      alphanumeric characters and also any Extra_ASCII_Codes added in this
;      datafill file. International set to TRUE does not restrict NTDA topline
;      data entry.
;
;  ExtraASCIICodes
;      Extra ASCII Codes for allowable topline data entry. `A-Z', `a-z', and
;      `0-9' are always allowed in the topline. NTDA default extra codes are
;      28 for field separator, 44 for comma, 45 for dash, and 46 for period.
;
;  Blink Files Searched
;      These variables will define searches that will blink at a rate defined
;      by the Blink_Timer.  If these do not appear in the file no blink file
;      names exist.  The below are examples not defaults.
;              Blink_File_Searched1=RES
;              Blink_File_Searched2=BUS
;                    .
;                    .
;
;  Link_Alarm_Service
;      Set this to a DA Service that operators commonly log into.  Once this is
;      set a link alarm will be generated on the DMS when the operator is logged
;      into this service and a DA link state changes.  To stop Link Alarms
;      entirely on the switch set this to -1.
;
;  FontIndex
;      FontIndex indicates which font NTDA will use. In this file, see the
```

```
;       [IWSINTERNAL] section, entries "NTDAFont<0-9>=", for a list of fonts
;       that NTDA can use. "FontIndex=0" maps to the NTDAFont0 entry,
;       "FontIndex=1" maps to the NTDAFont1, and so on. If FontIndex is not
;       specified, then NTDA defaults to FontIndex=0.
;
; **************************End terminal section***************************
;
;
; *****************************OptionsMenu*********************************
; Options Menu Section
;
; These are the strings for the Options Menu
; **************************End Options Menu******************************
;
;
; *****************************Softkeys***********************************
; Softkeys Section
;
; MPX Version of Softkeys
; **************************End Softkeys**********************************
;
;
; ****************************CFNKeys************************************
; CFNKeys Section
;
; Common Finding Names and Hardkeys
; **************************End CFNKeys***********************************
;
;
; ****************************MessageEditor*******************************
; MessageEditor Section
;
;  MessageEditorCopyToClipboard
;    If this parameter is FALSE, then NTDA does not automatically copy info
;    into the Windows clipboard on message editor start up. If this parameter
;    is TRUE, then NTDA automatically copies a text screen dump into the
;    Windows clipboard on message editor start up. The default value is TRUE.
; ****************************End MessageEditor****************************
[terminal]
Toggle_Selected_Listing=FALSE

Blink_Timer=500

Listing_Display_Scheme=NONE

Red_Top_Line=FALSE

Gray_NP=FALSE

NP_Name=NP

ServiceChangeFlag=1

MSA_Order=1
Input_Zone_Order=2
Listings_Order=3

OrderNamesBySize=FALSE
```

```
DisableFieldOverfill=FALSE

ClearFieldOnEdit=TRUE

TruncateFieldOnTab=TRUE

TruncateFieldOnSearch=TRUE

Call_Arrival_Cursor_Position=0
Softkey_Cursor_Position=FALSE

Language1=E
Language2=S

DAField1Col=32
DAField2Col=127
DAField3Col=222
DAField4Col=352
DAField5Col=447
DAField6Col=582
DAField7Col=707
DAField8Col=752

DALabel1Txt=Nm
DALabel2Txt=St
DALabel3Txt=Lo
DALabel4Txt=Ar
DALabel1Col=7
DALabel2Col=327
DALabel3Col=557
DALabel4Col=682

ColorListingText=Default
ColorListingBackground=Default
ColorMSAText=Default
ColorMSABackground=Default
ColorFieldText=Default
ColorFieldBackground=Default
ColorHighlightText=Default
ColorHighlightBackground=Default

Billing_Incomplete_Switch=0

International=FALSE

ExtraASCIICodes=28,44,45,46

Link_Alarm_Service=1

FontIndex=2

[OptionsMenu]

NonPubSearch = NONPUB SEARCH
Training     = TRAINING SEARCH
AdminSearch  = ADMIN SEARCH

[softkeys]
```

```
SoftkeyOption1  =
SoftkeyOption2  =
SoftkeyOption3  =
SoftkeyOption4  = DIFFER_COLOR, "Select",""
SoftkeyOption5  = OPR_VIEW_STATS, "View",""
SoftkeyOption6  =
SoftkeyOption7  =
SoftkeyOption8  =
SoftkeyOption9  =
SoftkeyOption10 =
SoftkeyOption11 =
SoftkeyOption12 = DIFFER_COLOR, "Hilight",""
SoftkeyOption13 = OPR_VIEW_STATS, "Stats",""
SoftkeyOption14 =
SoftkeyOption15 =
SoftkeyOption16 =
SoftkeySearch1  = LOCALITY1,  "", ""
SoftkeySearch2  = LOCALITY2,  "", ""
SoftkeySearch3  = LOCALITY3,  "", ""
SoftkeySearch4  = LOCALITY4,  "", ""
SoftkeySearch5  = LOCALITY5,  "", ""
SoftkeySearch6  = LOCALITY6,  "", ""
SoftkeySearch7  = LOCALITY7,  "", ""
SoftkeySearch8  = LOCALITY8,  "", ""
SoftkeySearch9  = LOCALITY9,  "", ""
SoftkeySearch10 = LOCALITY10, "", ""
SoftkeySearch11 = LOCALITY11, "", ""
SoftkeySearch12 = LOCALITY12, "", ""
SoftkeySearch13 = LOCALITY13, "", ""
SoftkeySearch14 = LOCALITY14, "", ""
SoftkeySearch15 = LOCALITY15, "", ""
SoftkeySearch16 = LOCALITY16, "", ""
```

[MessageEditor]

MessageEditorCopyToClipboard=TRUE

;

8.13 Hardware Dependencies

- There are no IWS hardware dependencies for the short message features.

- There may be required hardware changes on the Directory One side.

8.14 Software Dependencies

- The short message features are included as part of the IWS17.1 Base and NTDA software releases.

- The short messaging features require at least Directory One Release 2.03.00. Release 2.03.00 contains Directory One Call Control 2.03.00, XR 169-01475.

9.0 Appendix: ASCII codes

ASCII value	Control character	Key	ASCII value	Control character	Key	ASCII value	Key
000	NUL	CTRL-@	027	ESC	CTRL-[	054	6
001	SOH	CTRL-A	028	FS	CTRL-\	055	7
002	STX	CTRL-B	029	GS	CTRL-]	056	8
003	ETX	CTRL-C	030	RS	CTRL-|	057	9
004	EOT	CTRL-D	031	US	CTRL-_	058	:
005	ENQ	CTRL-E	032		spacebar	059	;
006	ACK	CTRL-F	033		!	060	<
007	BEL	CTRL-G	034		"	061	=
008	BS	CTRL-H	035		#	062	>
009	HT	CTRL-I	036		$	063	?
010	LF	CTRL-J	037		%	064	@
011	VT	CTRL-K	038		&	065	A
012	FF	CTRL-L	039		'	066	B
013	CR	CTRL-M	040		(	067	C
014	SO	CTRL-N	041		)	068	D
015	SI	CTRL-O	042		"	069	E
016	DLE	CTRL-P	043		+	070	F
017	DC1	CTRL-Q	044		,	071	G
018	DC2	CTRL-R	045		_	072	H
019	DC3	CTRL-S	046		.	073	I
020	DC4	CTRL-T	047		/	074	J
021	NAK	CTRL-U	048		0	075	K
022	SYN	CTRL-V	049		1	076	L
023	ETB	CTRL-W	050		2	077	M
024	CAN	CTRL-X	051		3	078	N
025	EM	CTRL-Y	052		4	079	O
026	SUB	CTRL-Z	053		5	080	P
081		Q	111		o		

ASCII value	Control character	Key	ASCII value	Control character	Key	ASCII value	Key
082		R	112		p		
083		S	113		q		
084		T	114		r		
085		U	115		s		
086		V	116		t		
087		W	117		u		
88		X	118		v		
089		Y	119		w		
090		Z	120		x		
091		[	121		y		
092		\	122		z		
093		]	123		{		
094		^	124					
095		_	125		}		
096		'	126		~		
097		a	127		delete		
098		b					
099		c					
100		d					
101		e					
102		f					
103		g					
104		h					
105		i					
106		j					
107		k					
108		l					
109		m					
110		n					

10.0 Revisions

10.1 Revisions for the post-GA release of 17.1

- Added Previous Search functionality description to Chapters 3 and 5.
- Clarified screens and message send functionality for SMS Message Editor Mode.

10.2 Revisions for release 17.1

- The following datafill (INI, TBL, and LNG) files were added, altered, or deleted.
  - **New files:**

    none
  - **Altered files:**

    SCRPTINI.INI
    MPXINI.INI
    MPXNET.INI
    NTDAINI.INI
    HOSTS.TBL
    PDCALLD.LNG
  - **Deleted files:**

    none
- The functionality of Short Messaging System is enabled and detailed in a new chapter, "IWS Message Editor (SMSDA Support)" on page 113.
- Updated Enhanced scripting functionality information for clarification in Chapters 3 and 5.

10.3 Revisions for release 17.0

- The following datafill (INI, TBL, and LNG) files were added, altered, or deleted.
  - **New files:**

    Short Messaging Service: (Base HMI)
    MSGEDIT.INI
    ME.LNG
    MESFK.LNG
    MESFY.LNG
    MESFTKEY.LNG
    XMEMSG.TBL
    XMESMSDM.TBL
    XMEEMLDM.TBL
    XMEDSPID.TBL

XMEEMLNM.TBL
XMEDTG.TBL
XMETRB.TBL
XKBOARD.TBL
NTDAINI.INI

Enhanced Dynamic Scripting:
XSCRULES.TBL
XSCRULES.XLT
SCRPTSCR.XLT

— **Altered files:**

MPXINI.INI (IWS Base)
SCRPTINI.IN I(IWS Base)
AACTSFK.LNG
NTDAMISC.LNG
OIAMSA.LNG

— **Deleted files:**

- The operating system for IWS has been upgraded from Windows 95 to Windows XP Professional.

- New Enhanced Scripting capability that allows various call parameters to drive the IWS script window display. Updates to the SCRIPTINI.INI format, new XSCRULES.TBL or XSCRULES.XLT, and new SCRPTCR.XLT.

10.4 Revisions for release 15.2

- NTDA scripting has been enhanced to reduce the number of key actions needed to handle a typical DA call with the scripting window enabled. The DA call arrives at the position as before, and, depending on datafill in file SCRIPTINI.INI, the script window is automatically displayed.

  With the new feature, however, the script window does not automatically get keyboard focus. The cursor appears in the Name field, and the script window is completely visible but not active. The operator can quickly check the contents of the script window, which is positioned to avoid obscuring any NTDA data entry fields. When the operator keys in a search key action, the scripting window automatically disappears, with no extra keystrokes required.

  NTDA scripting now allows the operator to perform typical DA keying even while the scripting window has focus. If the operator gives the scripting window focus by pressing the **Script Window Display** key action, then DA key actions like Name field and residential search are supported, as are IWS generic key actions such as **Clg**, **Pos Rls**, and **Fncts Menu**. (For key actions that change keyboard focus, the

scripting window loses focus.) This enhancement makes the keying functionality for NTDA scripting similar to that already provided for IWS Billing (NTOA).

- The NTDA setup application has the following enhancements:

  — There is a new cursor position button on the NTDA Setup window. When this button is selected, a new Cursor Position window displays.

  — The Cursor Position window provides an option for choosing the default location of the cursor at call arrival. The D1 system, rather than NTDA, controls the location of the cursor at call arrival and passes that location information to the IWS position. The D1 system globally defaults the cursor to either the Locality or the Name field for all users of the system. This option allows an individual position to override the global default cursor location. At the IWS position, the cursor can be datafilled to default to any of the fields Name, Street, Locality, and Area.

  — The Cursor Position window also provides an option for choosing whether to position the cursor automatically when a softkey is used to datafill the Locality and Area fields. With this option selected, the cursor automatically goes to the Name field when a softkey is used to datafill the Locality field

- IWS supports changing screen resolution through Windows 95. The standard IWS default is 640 x 480 pixels. If the Windows 95 screen resolution is changed, however, IWS supports the change. For information on changing screen resolution, refer to *TOPS IWS Base Platform User's Guide*, 297-2251-010.

- The NTDA service screen has been enhanced to provide a more three-dimensional appearance for the message status area, the NTDA data entry fields, and the softkeys.

10.5 Revisions for release 15.0

- No revisions in this release

10.6 Revisions for release 14.0

- The following datafill (.INI, .TBL, .LNG) files were added, altered, or deleted:

  — **New files:**

    – none

  — **Altered files:**

    – none

  — **Deleted files:**

    – none

- A new menu allows the operator to transfer certain calls to queues designated to handle calls of that type. The call type for queueing (CT4Q) menu window displays in the operator information window when the operator presses the **CT4Q**

key on the IWS keyboard twice. Up to 2046 call types for queueing can be listed in the CT4Q menu.

- A new **CT4Q** key allows access to the new CT4Q menu. Before it can be used, the **CT4Q** key must be bound to a key on the IWS keyboard.

- New IWS base files CT4QMENU.LNG and XCT4QMNU.TBL support the operations of the CT4Q menu.

10.7 Revisions for release 13.0

- The following datafill (.INI, .TBL, .LNG) files were added, altered, or deleted:

    — **New files:**

      – none

    — **Altered files:**

      – none

    — **Deleted files:**

      – none

- NTDA specific key action 177, **release to SMS**, has been added. This key action requests the database to release a short message to the caller. Release to SMS does not support a secondary language. Unlike the release to audio key action, the release to SMS key action does not have the ability to deny release to SMS or block release to SMS. The DMS switch "No automation" feature does not apply to the release to SMS key action.

- NTDA specific key action 176, **Locality to Name1**, has been added. This key action allows the user to copy the location field entry to the Name1 field with a single keystroke. This key action is especially useful for government and business searches. (See page 98.)

- NTDA specific key action 142, **redisplay scripting window**, is obsolete. The IWS generic key action 157, display scripting window, can be used for the same effect.

- NTDA specific key action 1, **backspace**, is obsolete. Either the IWS generic key action 10, backspace, or the standard Windows backspace, can be used for the same effect.

  If keyboard datafill from an earlier IWS release has mapped the NTDA backspace key action to the physical Windows backspace key, use KeyBind to map the IWS generic backspace key action to a physical key.

  Note that the IWS generic backspace key action can be mapped to different physical keys in different applications.

- NTDA specific key actions 41, 42, 46, and 47, **half page backward**, **half page forward**, **page backward**, and **page forward**, respectively, are obsolete. The IWS generic key actions 28, 29, 30, and 31, **half page backward**, **half page forward**, **page backward**, and **page forward**, respectively, can be used for the same effect.

Note: Every obsolete NTDA-specific key action can be replaced by an IWS generic key action that fulfills the same function. To make the replacement key actions work, however, you must use the KeyBind utility to map them to the appropriate physical keys. If you install IWS Release 13.0 without reassigning substitute key actions from the IWS generic key set, then the **redisplay scripting window**, **backspace**, **page backward**, **page forward**, **half page backward**, and **half page forward** keys will not work in the NTDA application.

The first step is to *undefine* the keys. This is necessary because, when you load Release 13.0, the keys are still bound to their old key actions from the previous load, even though those old key actions are now identified as unused.

Once you have undefined the keys, follow the instructions in the KeyBind chapter of *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015, to map the equivalent IWS generic key actions to them. Then these keys will work in NTDA.

Note that the obsolete NTDA-specific key actions come from the application-specific key set (key set 7) in the NTDA section of the KeyBind utility. The substitute key actions, however, come from the IWS generic key set (key set 1) in the default section. **Important:** Even though you are using the IWS generic key set, you must be in the NTDA section when you bind the generic key actions. Otherwise, depending on your default key bindings, the keys to which you have bound them may not work when you are in NTDA.

- The main NTDA Setup screen has been modified. The option to save or load configuration files is removed because these tasks can be carried out using the RAMP. A field is added to NTDA Setup to facilitate manual entry of the terminal ID. (See page 60.)

10.8 Revisions for release 12.0

- No revisions in this release.

10.9 Revisions for release 11.0

- The following datafill (.INI, .TBL, .LNG) files were added, altered, or deleted:

    — **New files:**
    – none

    — **Altered files:**
    – NTDAINI.INI
    – MPXINI.INI
    – XFNCTS.TBL
    – XTGDSPL.TBL

    — **Deleted files:**
    – none

- The ability to use the mouse, which was provisioned in file NTDAINI.INI by adding the line LeaveMouseOn, has been removed. (See page 111.)

- NTDA no longer supports the DA router system configuration. If you are upgrading to the release IWS110 version of NTDA from an earlier version that used the FT (DA) router configuration, or if you are using datafill in file MPXINI.INI from any release prior to IWS110, use the provisioning tool to remove FT router from the list of nonregistering applications. Failure to remove this line from file MPXINI.INI results in an error at startup of the IWS position.

- An operating company can indicate that calls from a specific subscriber line do not arrive at an automated service (that all such calls go directly to an operator) and cannot be released to any automated service. If the subscriber requests that an individual call be released to an automated service, the operator can use the new Allow Automation function (in file XFNCTS.TBL) or the block audio toggle key to release that call to automation.

- The six fonts shown below are available to help improve readability in the listing area of NTDA. (See page 68.)

Font name	Font identifier
Nortel light 8 fixed	Light8FixedFont
Nortel bold 8 fixed	Bold8FixedFont
Nortel short bold 8 fixed	ShortBold8FixedFont
Nortel short light 8 fixed	ShortLight8FixedFont
Windows fixed system	Fixedsys
Windows Courier	Courier

  — The Nortel light 8 fixed font is the default NTDA font as of IWS release 11.

  — The Windows fixed system font was the default NTDA font prior to IWS release 11.

  — The Nortel bold 8 fixed font bears a close resemblance to the Windows fixed system font, except that the zero character is more readable to some users.

  — The Nortel short bold 8 fixed and the Nortel short light 8 fixed fonts are short, to provide extra space between the listings.

- Following are Directory Assistance System (DAS) requirements for release IWS 11.0:

  — The connecting DAS must communicate with NTDA using the Nortel Networks Universal Message Protocol (UMP).

  — For sites using ADAS Plus, the connecting DAS must have its "datatype 15" feature enabled.

  — Directory One 2.01.03 is required to support the flexible display version 2 listing summary format.

- Several NTDA Setup screens have been modified to reflect changes in NTDA configuration:

  — IWS – NTDA Setup window: The DA Router button has been removed. A new button, Font/ASCII Codes, has been added to the Modify Configuration list. The DA Services button has been changed to Database Connection. (See page 60.)

  — Display Options window: The set of field and listing selections has been reordered for clarity. An entry field has been added for link alarm service. A new section has been created to allow selection of different search modes from the Options menu. (See page 63.)

  — DA Services Configuration window: The DA Services window has been renamed the Database Connection window. (See page 67.)

  — Font/ASCII Codes window: This new window has been created to allow the user to select one of six fonts. The International check box has been moved here from the Display Options window and renamed Extended Characters (International). The extra ASCII Codes selection has also been moved here from the Display Options window. (See page 68.)

  — Common Finding Names/Hardkey Configuration: The label "Search String" has been added to the associated field. The label "Action Key" has been changed to "Key Action." Accelerator keys have been added to both new labels.

- A key macro can record multiple key actions and perform them as a single keystroke. Up to 25 key actions can be recorded in a key macro, and up to 25 key macros can be defined. The KeyBind utility is used to set up and edit key macros for use on the IWS position.

- DA statistics no longer counts DA softkey strokes as two key counts, and isolated modifier key strokes (Shift, Alt, and Ctrl) are no longer counted as a single key count. When a modifier key is pressed with another key to produce a DA key action, a single key count is generated.

- NTDA supports billing for multiple number requests from a single listing screen. The following procedures describe different ways to generate billing. Note that not all procedures are recommended by Nortel Networks. Not all these procedures provide a complete billing record for each number requested. An incomplete billing record is an AMA record that is lacking the requested number.

  — The following sequence is straightforward and recommended by Nortel Networks. This procedure provides a complete billing record for each number requested. Follow the steps shown below when two numbers are requested from a single listing screen:
    – 1. perform search
    – 2. verbally quote the first requested number
    – 3. enter the line designator for the first requested number

–   4. press the GenAMA key

–   5. enter the line designator for the second requested number

–   6. press the release to audio key

If more than two numbers are requested from a single listing screen, repeat steps 2, 3, and 4 until you reach the last number requested, and then follow steps 5 and 6. Again, a complete billing record is generated for each number requested.

— The next procedure does not provide a complete billing record for each number requested, but it eliminates verbal quotes:

–   1. perform search

–   2. press the GenAMA key

–   3. enter the line designators corresponding to the requested numbers

–   4. press the release to audio key

If more than two numbers are requested from a single listing screen, repeat step 2 (press the GenAMA key once for EACH additional requested number), and then follow steps 3 and 4. A complete billing record is generated for only one of the requested numbers.

— The following procedure is the most complicated, but it eliminates verbal quotes and provides a complete billing record for each number requested:

–   1. perform search

–   2. enter the line designator for the requested number

–   3. press the GenAMA key

–   4. continue steps 2 and 3 for each requested number except the last requested number

–   6. starting with the *LAST* requested number, enter all the line designators for all the requested numbers

–   7. press the release to audio key

The line designator—GenAMA key sequence shown in steps 2 and 3 generates a complete billing record for each requested number except the last. The line designators—release-to-audio key sequence shown in steps 6 and 7 provides a complete billing record for the last requested number, and also releases all the requests to audio.

Note: **As of IWS 11, the procedure that uses the key sequence, first line designator—second line designator—(and so on)—GenAMA—release to audio, is *NO LONGER SUPPORTED* by NTDA.**

•   NTDA now supports enhanced DA hardkeys. Primary search key actions can now be datafilled with each DA hardkey. With this change, a DA hardkey can now automatically fill in the topline information fields and begin a DA search. (See page 71.)

Primary (that is, initial) search key actions are supported in addition to "NO_FUNCTION" and "DA_PRINT_SCREEN." Secondary search key actions

are not supported, because they are not applicable to DA hardkeys. The following triggers can be assigned to hardkeys:

- BUSINESS_MEMBER_SEARCH
- BUSINESS_SEARCH
- CATEGORY_SEARCH
- CNA_SEARCH
- GOVERNMENT_SEARCH
- NO_FUNCTION
- PHONETIC_SEARCH
- RESIDENTIAL_SEARCH
- SPECIAL_BUSINESS_SEARCH
- STREET_SEARCH

 Use NTDA Setup to assign the key actions and topline information fields to hardkeys. Use KeyBind to map the hardkey to a specific key.

- Several CBT, IBM DA, and NTDA key actions that are no longer used in the IWS generic key set key action list have been made obsolete. These key actions are now represented by place holders in KeyBind that read "nn - Unused key action nn." The list on the next page shows the obsolete key actions.

 As before, NTDA key actions are stored in the NTDA section and can be assigned using KeyBind.

List of obsolete key actions

43–Name	109–Next minor field
44–Street	110–Next major field
45–Locality	111–Clear nm st fields
46–Area	112 - Hardkey 01
47–Residential	113 - Hardkey 02
48–Govt	114 - Hardkey 03
49–Business	115 - Hardkey 04
50–Special Business	116 - Hardkey 05
51–Intercept	117 - Hardkey 06
53–CNA	118 - Hardkey 07
54–Alternate Language	119 - Hardkey 08
55–Release to Audio	120 - Hardkey 09
56–Phonetic Search	121 - Hardkey 10
57–Options	122 - Hardkey 11
58–Keyword Search	123 - Hardkey 12
59–Full Set	124 - Hardkey 13
60–Expanded Locality	125 - Hardkey 14
61–LocalityStep	126 - Hardkey 15
93–Category search	127 - Hardkey 16
94–Address search	128 - Hardkey 17
95–Restart	129 - Hardkey 18
96–Menu	130 - Hardkey 19
97–Quick_line_des	131 - Hardkey 20
98–CBT_advance	132 - Hardkey 21
99–CBT menu	133 - Hardkey 22
100–CBT exit	134 - Hardkey 23
101–CBT audio repeat	135 - Hardkey 24
102–CBT toggle	136 - Hardkey 25
103–CBT answer key	137 - Hardkey 26
104–CBT frame number	138 - Hardkey 27
104–CBT frame number	139 - Hardkey 28
105–CBT help	140 - Hardkey 29
106–CBT debug	141 - Hardkey 30
107–DA only	142 - Hardkey 31
108–CBT sync author	143 - Hardkey 32

10.10 Revisions for release 10.0

No revisions in this release.

10.11 Revisions for release 9.0

- The following datafill (.INI, .TBL, .LNG) files were added, altered, or deleted:

    — **New files:**
    - NTDASPID.TBL
    - NTDAMISC.LNG
    - NTDACORG.TBL (renamed from CORGNTDA.TBL)
    - NTDACT4Q.TBL (renamed from CT4QNTDA.TBL)

    — **Altered files:**
    - SCRPTINI.INI
    - MPXPARM.INI
    - NTDAINI.INI

    — **Deleted files:**
    - CORGNTDA.TBL
    - CT4QNTDA.TBL

- File NTDAMISC.LNG supplies string identifiers and corresponding text messages for display in miscellaneous NTDA fields. (See page 21, page 30, and page 32.)

- In file NTDAINI.INI, the following parameters are changed:

    — CFNKey1–CFNKey12—these common finding names keys are now left blank by default. The service provider can datafill these parameters using NTDA setup.

    — INTERNATIONAL—FALSE restricts NTDA topline data entry to alphanumeric characters and whatever other extra ASCII codes the customer wishes to datafills in this file. The customer can datafill upper- and lower-case a–z, 0–9, 28 (for field separator), 44 (for comma), and 46 (for period). (See page 27.)
      TRUE provides for no restrictions on data entry in the top line

    — Link_Alarm_Service—This parameter was added to enable NTDA database link alarms. Set parameter Link_Alarm_Service to a TOPS DA service number commonly logged on to by operators. Once the parameter is set, NTDA will request that the DMS switch generate link alarms whenever a DA database link state changes and the operator is logged on to this service. The default value for the parameter is 1. To stop link alarms entirely on the DMS switch, set the parameter equal to –1.

    Section IWSMSA has been moved to the internal section of file NTDAINI.INI. It is recommended that these values are not changed.

- **Scripting changes:** File NDTASPID.TBL has been created to cross-reference SPIDs with the script message IDs from IWS base file SCRPTSCR.SCR. (See page 77.) Scripting hierarchies can now be set by the user to control the scripting window. (See page 51.) SPID is an additional attribute in the scripting window, where up to 250 SPIDs can be used. (See page 50.) The following datafillable variables are added (See page 107.) to file SCRPTINI.INI:

  — SPIDPriority
  — CT4QPriority
  — COPriority

- **Trunk group/SPID display changes:** Both SPID and trunk group information can now be displayed at the same time. In file MPXPARM.INI, the following datafillable variables are added:

  — DisplayBoth (settings are: 1 for ON, 0 for OFF)
  — Priority (settings are: 1 for trunk group, 2 for SPID)

- **Year 2000 compliance:** NTDA is verified to be year 2000 compliant.

- **Quest 411:** The NTDA application and NTDA Setup now fully support Nortel Network's Quest 411 Area Menu Enhancements feature.

- **Open numbering plan changes:** Support is added for the open numbering plan that allows directory numbers of 15 unformatted or 19 formatted digits.

- **ISO 8859-1 support:** Support is added for ISO 8859-1 (Latin 1) character set. A new parameter, "International," is added to NTDAINI.INI and NTDA Setup that allows any Latin 1 character to be entered in the NTDA search input fields. (See page 70.)

- **Directory One support:** A street search key is added to support Directory One's new street search feature. (See page 98.)

10.12 Revisions for release 8.0

- The following files are renamed:

  — MPXNTDA.EXEtoNTDA.EXE

  — MPXSETUP.EXEtoNTDASETP.EXE

  — MPXNTDA.INItoNTDAINI.INI

  — MSA.LNGtoNTDAMSA.LNG

  — MPXNTDA.KBDtoNTDA.KBD

  — XKBOARD.DAtoNTDAXKB.TBL

- The contents of NTDA file MPX.INI are moved into the new NTDA file, NTDAINI.INI. Any changes that have been made to MPX.INI from the default must be made manually to the new NTDAINI.INI file included in this release.

- The application tag for NTDA, used in datafilling files XAPPL.TBL and XSERVS.TBL, is renamed from MPXNTDA to NTDA.

- Installation changes:

  — Uninstall is no longer needed during NTDA installation; therefore, it is removed as an NTDA install option.

  — When upgrading to NTDA 8.0 from a release prior to NTDA 6.0, the following actions are taken during installation:
    – Directory C:\IWSNTDA\BIN and all its contents are deleted.
    – NTDA software is installed into C:\IWSNTDA.
    – All datafill files are automatically overwritten with NTDA 8.0 default datafill. The previous .LNG and .TBL datafill files are saved as <filename>.IWS in the IWS datafill directory and previous .INI datafill files are saved as <filename>.IWS in the Windows directory. Custom datafill must be propagated manually to the new versions of the files.

  — When upgrading to NTDA 8.0 from NTDA 6.0 or NTDA 7.0, the following actions are taken during installation:
    – Directory C:\IWSNTDA\BIN and all its contents are deleted.
    – NTDA software is installed into C:\IWSNTDA.
    – A dialog box displays asking if datafill should be preserved or overwritten with defaults. If the option to overwrite datafill is chosen, all datafill files are automatically overwritten with NTDA 8.0 default datafill. If the option to preserve datafill is chosen, some datafill files are preserved but updated files that are necessary for the proper functioning of the new release of software are overwritten. These files include NTDAINI.INI (previously MPX.INI and MPXNTDA.INI) and NTDAMSA.LNG (previously MSA.LNG).
    – When files are overwritten, the previous .LNG and .TBL datafill files are saved as <filename>.IWS in the IWS datafill directory and previous .INI datafill files are saved as <filename>.IWS in the Windows directory. Custom datafill must be propagated manually to the new versions of the files.

  — When upgrading from NTDA 8.0 to a newer version of NTDA 8.0, the following actions are taken during installation:
    – NTDA software is installed into C:\IWSNTDA.
    – A dialog box displays asking if datafill should be preserved or overwritten with defaults. If the option to overwrite datafill is chosen, all datafill files are automatically overwritten with NTDA 8.0 default datafill. If the option to preserve datafill is chosen, all datafill is preserved and left unchanged.
    – When files are overwritten, the previous .LNG and .TBL datafill files are saved as <filename>.IWS in the IWS datafill directory and previous .INI datafill files are saved as <filename>.IWS in the Windows directory.

Custom datafill must be propagated manually to the new versions of the files.

— Automatic datafill of files MPXINI.INI, AUTOEXEC.BAT, XSERVS.TBL, and XAPPL.TBL is removed. The user must manually datafill these files.

— The NTDA executable code, previously installed into directory C:\IWSNTDA\BIN, is now installed into directory C:\IWSNTDA. Directory C:\IWSNTDA\BIN no longer exists.

• The MPX Setup utility is reformatted and renamed the NTDA Setup utility.

— The Screen Layout window is reformatted and renamed Layout Options window.

— The Behavior Configuration window is reformatted and renamed Display Options window.

— The Router Configuration window is reformatted and renamed DA Router Configuration window.

— The CFN/Hardkeys Setup window is added.

— The Load Configuration and Save Configuration windows are reformatted.

— The Services window is reformatted and renamed DA Service. The terminal ID input area is removed.

10.13 Revisions for release 7.0

• Support for entry of a comma character in the top line entry fields was added.

• Support for display of the branding icon in the MSA was added.

• Top line flashing problem at call arrival was corrected.

• Statistics mismatch problem between the DMS switch and the DAS was corrected.

• File MPXPOSN.INI is no longer used. In the Services window of MPX Setup, the terminal ID is still requested, although it is not used. This parameter was datafilled in file MSA.LNG. (See page 38.)

• Link icons are displayed in the MSA.

• The NTDA and NTOA applications are now able to coexist on the same IWS position to provide multiple services such as toll and DA.

• TCP communication layer related datafill was relocated from file MPX.INI to CLNTTCPI.INI. The Provtool utility is used to modify these values.

10.14 Revisions for release 6.0

• IWS NTDA uses the IWS Display Library for displaying billing information in the MSA.

• NTDA is RAMP (Remote Access Maintenance Position) compatible and provides

software distribution, application message tracing, and application profiling through RAMP.

- The Keyboard mapping utility that existed with NTDA release 1 and NTDA release 2 no longer exists. Instead, NTDA key mapping is now done with the IWS keyboard mapping utility, KeyBind. The NTDA default keyboard file, XKBOARD.DA (renamed to NTDAXKB.TBL in Rls08), should be appended to the end of the IWS keyboard file, XKBOARD.TBL, to provide default key mappings for the NTDA application. To datafill NTDA keys within the KeyBind utility, select the NTDA section and the application-specific key set. Use the displayed key actions to define NTDA keys.

- NTDA datafill files can be accessed using the IWS Provtool utility. These files include MSA.LNG (renamed to NTDAMSA.LNG in Rls08), CORGNTDA.TBL, and CT4QNTDA.TBL.

- NTDA supports access to the scripting window. Datafill files CORGNTDA.TBL and CT4QNTDA.TBL are provided to cross-reference the scripts listed in SCRPTSCR.SCR to call origination types and CT4Qs, respectively.

- NTDA provides support for ADAS Plus.

- NTDA provides support for non-ISIS directory assistance configurations.

- The application tag for NTDA, used in datafilling files XAPPL.TBL and XSERVS.TBL, is renamed from NTDAIL to MPXNTDA.

11.0 List of terms

access service node (ASN)

> xxx

ADAS

> *See* Automated Directory Assistance Service.

AMA

> *See* automatic message accounting.

American Standard Code for Information Interchange (ASCII)

> The standard coding method used by small computers to convert letters, numbers, punctuation, and control codes into digital format. There are 128 defined ASCII characters.

ANI

> *See* automatic number identification.

API

> *See* application programmer's interface.

application programmer's interface (API)

> A Windows messaging protocol and interface function used to exchange information (for example, between IWS base software and position applications) about system events (such as operator logon, call begin, call end, position maintenance commands, and receipt of open position protocol (OPP) data identifiers (DIDs)) and application requests (such as requests to send OPP action identifiers (ActIDs) to the DMS switch, requests to generate IWS system logs, and requests for position or call specific information).

ARU

> *See* audio response unit.

ASCII

> *See* American Standard Code for Information Interchange.

ASN

> *See* access service node.

audio response unit (ARU)

> A device that translates dual-tone multi-frequency signaling from a computer into synthesized voice responses.

Automated Directory Assistance Service (ADAS)

> A TOPS feature that automates the inquiry portion of directory assistance calls. The caller is prompted to speak the locality and name for which a directory number is requested. These details are recorded, the silences are deleted, and then the recording is played to the operator before the call is connected.

automatic message accounting (AMA)

> An automatic recording system that documents all the necessary billing data of subscriber-dialed long distance calls.

automatic number identification (ANI)

> A system in which a calling number is identified automatically and transmitted to the AMA office equipment for billing.

average work time (AWT)

> The time (in seconds) required to handle the average call, including all operator unavailable time.

AWT

> *See* average work time.

call-busy work volume (CBWV)

> The work volume generated when an occupied position is handling a call. CBWV is the total amount of time an operator spends actively handling a call.

call type for queueing (CT4Q)

> A variable identified in DMS switch tables that is subjected to sequential refinement to determine the queue to which a call belongs. For each call origination type, TOPS provides a CT4Q. The datafill in several DMS switch tables then determines where the CT4Q ultimately goes.

CBT

> *See* computer-based training.

CBWV

> *See* call-busy work volume.

CFN

> *See* common finding name.

CNA

> *See* customer name and address.

common finding name (CNF)

Key action that allows the user to map frequently used search strings to a single key press. The key action defines what string will be entered in the current search input field when the associated CFN key is pressed. For each of the 32 common finding names available, a specific string can be datafilled.

computer-based training (CBT)

A system that allows operators to train at an IWS workstation.

CT4Q

See call type for queueing.

customer name and address (CNA)

One type of initial search supported by the NTDA application. The operator enters a directory number, and the name and address listings matching the directory number are returned.

DA

See directory assistance.

Digital Multiplex System (DMS)

The Nortel Networks central office switching system in which all external signals are converted to digital data and stored in assigned time slots. Switching is performed by reassigning the original time slots.

directory assistance (DA)

A service that allows a caller to ask an operator to look up information from a telephone listing database.

Disk Operating System (DOS)

An operating system for computer systems that use disks and diskettes for auxiliary storage of programs and data.

DMS

See Digital Multiplex System.

DOS

See Disk Operating System.

HMI

See human machine interface.

human machine interface (HMI)

The keyboard input and response displays used by the operator or operating company personnel to communicate with the IWS positions.

input/output controller (IOC)

    An equipment shelf that provides an interface between the central message control and up to 36 input/output devices. The IOC contains a peripheral processor that independently performs local tasks, thus relieving the load on the central processing unit.

IOC

    See input/output controller.

Intelligent Workstation (IWS)

    The Nortel Networks programmable operator workstation for traditional and non-traditional operator services.

International Organization for Standardization (ISO)

    The organization responsible for creating a seven-layer protocol mode for a data communications network.

Internet Protocol (IP)

    Along with Transmission Control Protocol (TCP), one of the two main parts of the TCP/IP protocol suite. IP enables information to be routed from one network to another. It is used in the public Internet and in private intranets.

IP

    See Internet Protocol.

ISO

    See International Organization for Standardization.

IWS

    See Intelligent Workstation.

LAN

    See local area network.

Line Information for Open Networks (LION)

    The Nortel Networks platform for providing call intercept, intercept call completion, and line profiling services (screening).

LION

    See Line Information for Open Networks.

local area network (LAN)

    A short-distance data communications network that permits the connection and communication of multiple computers and peripherals under some form of standard control.

message/status area (MSA)

    A window on the TOPS IWS screen that is used to relay system, service, and application-specific information to the operator.

MPC

See multiprotocol controller.

MSA

See message/status area.

multiprotocol controller (MPC)

A general-purpose card that allows data communications between a DMS switch and an external computer (such as a central office billing computer). The MPC card resides on the IOC shelf.

NPA

See numbering plan area.

NTDA

Nortel Networks Directory Assistance application that runs on the IWS platform

numbering plan area (NPA)

Any of the designated geographic divisions of the United States, Canada, Bermuda, the Caribbean, Northwestern Mexico, and Hawaii, within which no two telephones have the same seven-digit number. Each NPA is assigned as a unique, three-digit area code.

OGT

See outgoing trunk.

OIA

See Open Information Access.

OLNS

See originating line number screening.

ONI

See operator number identification.

Open Information Access (OIA)

The TOPS IWS application that provides reference data such as emergency number information, rate and route information, phraseology, and city name through an external database.

Open Position Protocol (OPP)

The protocol required to facilitate communication between a TOPS switch and an OPP-compatible terminal, such as the TOPS IWS.

operator number identification (ONI)

A feature that brings an operator into the circuit to check the calling number when a subscriber has direct-dialed a long distance call.

OPP

See open position protocol.

outgoing trunk (OGT)

A trunk used for calls going out to a distant toll center.

QMS

See Queue Management System.

Queue Management System (QMS)

A software package that provides enhanced capabilities for the
management of call queues.

RAMP

See remote access maintenance position.

remote access maintenance position

An IWS position that performs maintenance on other IWS positions to
which it is connected. The RAMP functionality is intended for use by
operating company personnel at customer sites and Nortel Networks
personnel who provide support for IWS operations.

return to service (RTS)

Bring a position back into active use.

RTS

See return to service.

SDK

See Software Development Kit.

service provider identification (SPID)

The actual operating company of the subscriber, which may be different
from the trunk group.

Software Development Kit (SDK)

A set of software development tools provided by Nortel Networks for use
by IWS application developers and operating company personnel to add
third-party software to the IWS position. These tools include the
Graphical User Interface for DMS Emulation (GUIDE) and the
Application Manager, which provides a graphical user interface that
allows commercial applications to be integrated onto an IWS position.

SPID

See service provider identification.

TCP

See Transmission Control Protocol.

TOPS

See Traffic Operator Position System.

Traffic Operator Position System (TOPS)

The Nortel Networks traffic operator position system, consisting of a DMS switch and peripherals such as the IWS workstation.

Transmission Control Protocol (TCP)

The portion of the TCP/IP protocol suite that governs the exchange of sequential data. TCP is a specification for software that bundles data into packets, manages the transmission of packets across a network, and checks for errors.

UMP

See Universal Gateway/Position Message Protocol.

Universal Gateway/Position Message Protocol (UMP)

An NTDA-specific protocol used to map characters from non-English keyboards through the DMS switch. The UMP.INI file can be datafilled with up to 10 site-specific characters. The UMP protocol translates these characters into ones the DMS switch can recognize.

wide-area network (WAN)

A network that uses lines provided by common carriers to cover an extended geographical area. Local telephone companies provide the links The network connects widely dispersed sites.

WAN

See wide-area network.

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TOPS IWS

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