Lucent Technologies
Bell Labs Innovations

INTUITY™ CONVERSANT® System

Version 7.0

Year 2000 Compliance

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Comcode 108343096
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- Answered by the called station
- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

This equipment returns answer-supervision signals on all DID calls forwarded back to the public switched telephone network. Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received

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Acknowledgment
This document was prepared by Product Documentation, Lucent Technologies, Columbus, OH.

Contents

Year 2000 Compliance

Overview

The purpose of this document is to inform the customer of the areas that are affected by year 2000 issues and provide guidelines to help in establishing year 2000 compliance.

This document provides the following information:

- Definition of year 2000 compliance — A general description of year 2000 compliance, including the address for the World Wide Web site for Lucent Business Communications Systems (BCS) where you can view the BCS definition of compliance. Also included is a summary of customer responsibilities for ensuring year 2000 compliance.
- Guidelines for reviewing your applications — A checklist of suggested areas to investigate in your applications when reviewing them for year 2000 compliance.
- Notes on developing applications that are year 2000 compliant — Recommendations to follow to keep your applications year 2000 compliant.
- Areas requiring additional consideration — Descriptions of additional areas of your system that you should be aware of when preparing your system for year 2000 compliancy. Some areas are merely conditions you should note, and others are areas that have been fixed by remote-field update.
- Information for advanced users — An appendix containing descriptions of the current format for speaking dates after the year 2000 in U.S. English Enhanced Basic Speech and U.S. English Text To Speech, and testing guidelines should you choose to test your own applications.

Disclaimer: We have attempted in this book to provide an exhaustive list of items affected by the year 2000. However, we may have overlooked other areas. If you identify any such areas, contact the remote maintenance center to report the problem. Lucent Technologies makes no representation or warranty that this version or any other version of the INTUITY CONVERSANT system is entirely year 2000 compliant.

What Is Year 2000 Compliance?

When the date changes from the 20th century (19xx) to the 21st (20xx), INTUITY CONVERSANT features that contain or handle two-digit calendar years, such as reports and call data records, can function in atypical ways. Also, INTUITY CONVERSANT applications that process data containing dates from the 21st century might require modifications in order to ensure that calendar years are handled correctly. “Year 2000 compliance” is the process of updating and modifying your system so that it handles 21st-century calendar years accurately.

Lucent BCS Internet Web Site

For the most current information about year 2000 issues and Lucent Business Communications Systems (BCS) products, see our World Wide Web site at **www.lucent.com/enterprise/sig/yr2000** (or, from the Lucent Technologies home page of www.lucent.com, click on Solutions for Your Enterprise, then Special Interest Groups, then Year 2000). At this site, you can view the complete Lucent BCS definition of compliance.

Summary of Customer Responsibilities

The following list summarizes the steps that customers are responsible for taking to make their system year 2000 compliant. More detailed instructions or guidelines for each step are included in this document. The most time-consuming step is that of reviewing your applications for non-compliant behavior. If areas of non-compliancy are found and modifications are needed, these changes are usually minor and easy to fix.

1. Read through this document to ensure that you understand all areas that apply to your system for year 2000 compliance.
2. Ensure that all existing applications are year 2000 compliant, which includes the following tasks:
   - Assess your resources: For example, determine if you have applications that were developed by an outside vendor, or if you have the in-house expertise to review your applications.
   - Familiarize yourself with the areas affected by year 2000.
   - Determine which applications need to be reviewed.
   - Review, modify if necessary, and test the appropriate applications. Note that Lucent Technologies *strongly recommends* that you contract with a software provider to test your applications.
3. Ensure that applications developed now and in the future are year 2000 compliant.
4. Familiarize yourself with all remaining areas that might behave differently concerning calendar dates.

NOTE:
If you use Voice@Work, you must ensure that the personal computer on which it is loaded is year 2000 compliant.

Guidelines for Reviewing Your Applications

All INTUITY CONVERSANT applications should be evaluated for year 2000 issues. This section provides guidelines to help you review your applications and is organized into the following areas:

1. Assess your resources
2. Familiarize yourself with the areas affected by year 2000
3. Determine which applications need to be reviewed
4. Review, modify, and test the appropriate applications

> **NOTE:**
> Lucent Technologies *strongly recommends* that you contract with a software provider to test your applications. If you do choose to test your applications yourself, be sure that you test on a non-production machine. For details see "Guidelines for Testing Your Applications" in Appendix A, "For Advanced Users".

Assess Your Resources

Before you begin modifying your applications, determine the following and estimate any possible costs:

- Was your application developed in-house? If you contracted with an outside vendor, contact the vendor to discuss year 2000 compliance for the application. If you contracted with Lucent Technologies, contact your Lucent Technologies Account Representative.
- Do you have the expertise in-house to review your applications for compliance? If you do not, contact your Lucent Technologies Account Representative for help in connecting you to a software provider.
- Does the application source code reside in-house, or did a software vendor provide the object code only? If a software vendor retained the source code, contact the vendor to discuss year 2000 compliance for the application.
- Do you have the software or tools to make the necessary changes (Script Builder, Voice@Work, or a development tool such as Pro*C)? If not, then contact the application developer who wrote the application.

Familiarize Yourself with Areas Affected

Thoroughly review the sections "Developing Compliant Applications" and "Areas Requiring Additional Consideration" so that you can more easily identify the areas within your own applications that might need modification. These sections describe the areas that are affected by the year 2000 and provide any preventative or alternative actions that might be required.

Determine the Applications to Be Reviewed

Examine your applications to determine which ones will be affected by year 2000 issues. Of those applications that require review, determine when the data is impacted—some applications may be affected well before January 1, 2000. You can use the following general guidelines to help determine the applications that need to be reviewed:

1. Determine all applications that have date-related information that is collected, stored, manipulated, spoken, recognized, or reported. If an application does not in any way handle date-related information, it might not need to be reviewed.
2. Determine if the data used by an application will span into the 21st century (years 2000-2999). If so, when? For example, if you ask callers to input their credit card expiration date, is that date already in the 21st century? If yes, your application may already be impacted. If your data always remains in the current year, your solution may not be affected until the year 2000. Be aware that some applications can be affected in the last hours of December 31, 1999, or the first hours of January 1, 2000 (see "Areas Requiring Additional Consideration").
3. Determine if you have any applications that will be replaced prior to year 2000 and that do not handle date-related information involving years in the 21st century. These applications might not need to be reviewed.

NOTE:
It is best to review all applications thoroughly unless you are certain that an application will not be affected.

Review, Modify, and Test Your Applications

In most cases, the most time-consuming portion of making your system year 2000 compliant involves reviewing your applications for non-compliant behavior. If areas are found, they usually require only minor changes to become compliant, such as replacing a hard-coded “19xx” with something more appropriate. After making modifications, each application must be tested thoroughly to make sure it operates correctly.

NOTE:
Lucent Technologies *strongly recommends* that you work with a software provider to test your applications. However, if you choose to do this work yourself, refer to the section “Guidelines for Testing Your Applications” in Appendix A, “For Advanced Users”.

Review Checklist

Use the checklist below as a guide in reviewing your voice response solution for year 2000 compliance. The list describes areas to investigate for year 2000 compliance, but it is not intended to be exhaustive. Each customer may have unique year 2000 compliances issues based on the current configuration and applications. Areas to examine include:

- Applications that assume “19xx” when collecting, storing, manipulating, or speaking years.
- Date-related information that uses two-digit years (such as 98, 99, 00). In most cases, using a four-digit year ensures fewer errors are made in manipulating, comparing, storing, or speaking the year. Changing your application to accept four-digit years may require re-recording the prompts that ask callers for this data.
- Applications that manipulate dates (for example, calculating age, expiration date, and so on). Test to ensure correct operation when the dates involved span the 20th and 21st centuries, and when in the 21st century.
- Custom written shell scripts or programs (or DIPs) that accept or display date-related information; for example, a custom call data report that accepts a date as input. Test to ensure that years beyond 1999 are accepted and output correctly.
- Custom cron (automatically scheduled) jobs. Test to ensure execution beyond the 20th century.
- Host database records. The application developer must review the host data field formats and determine if any changes are needed. For example, an application might benefit from using the new YT*xxx* format described in the section “Use New Formats for Script Builder Host Input date Fields”.

- Host databases that contain records using a two-digit year, and the century is context dependent. The application developer must include some post processing after the year is retrieved and translated by the host DIP.
- Applications that use spoken dates (specifically with a two-digit year). Test to ensure that end customers find acceptable the spoken format for years beyond 1999. For details on spoken formats, see "Spoken Formats for Speaking Dates" in Appendix A, "For Advanced Users".

Customized Applications

Almost every INTUITY CONVERSANT system has some type of customized application loaded. This application may include scripts, custom menus, custom reports, and so forth. Because of the unique nature of each custom application, year 2000 compliance for many custom components falls outside the responsibility of Lucent Technologies. You are, therefore, responsible for ensuring that your INTUITY CONVERSANT custom applications can continue to operate through the year 2000. Lucent Technologies strongly recommends that you work with a software provider to test these applications.

Developing Compliant Applications

This section provides information on the following topics to help you construct applications that are year 2000 compliant:

- Use four-digit years whenever possible
- Use new formats for Script Builder date fields for host input
- Adapt your method for processing dates later than the year 2038

Use Four-Digit Years

When modifying existing applications and developing new ones, always use four-digit years whenever possible. Using four-digit years eliminates the issues surrounding system interpretation of the century for two-digit years. If you must continue to use two-digit years, be sure and read carefully the information in this section and in the section "Areas Requiring Additional Consideration".

Two-Digit Years in *date* Fields in Script Builder Database Tables

If you are using Script Builder or Voice@Work to manually edit a date field in a database table, always use a four-digit year. In a database table, INTUITY CONVERSANT stores dates in a *CCYYMMDD* format (*century year month day*). If an application inserts a date field with a two-digit year instead of a four-digit year, the system appends the current century to the value. Your applications can be affected by this operation if your date data spans both the 20th and 21st centuries. For example, if the current date is 1999, a two-digit year such as 02 (for 2002) will have "19" appended to it, thereby becoming 1902 instead of 2002. You can avoid such cases by ensuring that your application provides a four-digit year.

Use New Formats for Script Builder Host Input *date* Fields

The INTUITY CONVERSANT System Version 7 provides formats for host date fields to accommodate dates in the 21st century, as well as a host date field (YT*xxx*) for two-digit years that supports a range of 100 years. You now have the following three formats to use to designate a year for a host date field:

- Y — Indicates a two-digit year in the *current* century.
- YY — Indicates a four-digit year.
- YT*xxx* — Indicates a four-digit year. Use this format when an application is receiving a two-digit year from an IBM host that has dates spanning both centuries. You define a threshold that determines which century is assigned. See the next section for details.

The YT*xxx* Format

The YT*xxx* format allows you to specify a threshold from 0 through 100 to use when applications receive two-digit years from an IBM host that has dates spanning the 20th and 21st century. This threshold is defined in the host screen definition field for the application. (See “Defining Screen Fields” in *INTUITY CONVERSANT System Version 7.0 Application Development with Script Builder*, 585-313-206, for instructions on how to define host screen definition fields.) YT is a two-digit year algorithm that translates the year input received from the host (*yy*) in the following way: If the year *yy* is equal to or greater than the specified threshold, the year is translated to 19*yy*. If the year *yy* is less than the specified threshold, the year is translated to 20*yy*.

To determine an appropriate threshold, analyze the range of dates required per date field from the host. For example, if the range of dates falls between 1940 and 2039, use a threshold of 40 (YT40). If the format is YT40 and an input year from the host is 45 (equal to or greater than 40), the year is translated into 1945. If the input year from the host is 37 (less than 40), the year is translated into 2037.

For a 100-year span of 1900 through 1999, use the format YT0; for the years 2000 through 2099, use YT100.

See *INTUITY CONVERSANT System Version 7.0 Application Development with Script Builder*, 585-313-206, for detailed information on defining host input date fields.

Available Formats

Table 1 shows the formats that are now available for you to use when defining host input into a date field.

NOTE:
Two-digit years in "current-century format" assume "19" or "20" as the century, according to whether the current century is 19*xx* or 20*xx*. For example,11/23/05 is interpreted as November 23, 2005, when the current century is the 21st. However, if the current century is the 20th century (19xx), the system will interpret 11/23/05 to be 1905.

Table 1. Host Input into a *date* Field

Format	Description
D	Date in *month day year* format, regardless of the separators used. The month is by digit or name and the year can be in two or four digits, with two-digit years in current-century format.
DM/D/Y	Date in *month/day/year* format with *year* in the current century, such as 11/23/98, 01/02/01, or 1/2/01 (default) with slashes (/) as separators.
DM-D-Y	Date in *month-date-year* format with *year* in the current century, such as 11-23-98, 01-02-01, or 1-1-01 (default) with hyphens (-) as separators.
DM.D.Y	Date in *month.date.year* format with *year* in current-century format, such as 11.23.98, 01.02.01, or 1.2.01 (default) with periods (.) as separators.
DM/D/YY	Date in *month/date/year* format, such as 11/23/1998 or 01/02/2001, with slashes (/) as separators.
DMBD,BYY	Date in *month date, year* format, such as November 23, 1998, or January 2, 2001.
DYY.M.D	Date in four-digit *year.month.day* format with periods (.) as separators, such as 1998.11.23 or 2001.1.2
DM/D/YT*xxx*	Date in *month/day/year* format with slashes (/) as separators. The YT*xxx* threshold is defined in the host field definition and then compared to the input from the host to determine if the century is "19" or "20".
DM-D-YT*xxx*	Date in *month-day-year* format with hyphens (-) as separators. The YT*xxx* threshold is defined in the host field definition and then compared to the input from the host to determine if the century is "19" or "20".
DM.D.YT*xxx*	Date in *month.day.year* format with periods (.) as separators. The YT*xxx* threshold is defined in the host field definition and then compared to the input from the host to determine if the century is "19" or "20".

Adapt Date-Processing Methods for Year 2038

The UnixWare v2.1 operating system supports dates between January 1, 00:00:00, 1970 Greenwich Mean Time (GMT), and January 19, 03:14:07, 2038 GMT, as shown in Table 2. (GMT is a standard method of measuring time on a 24-hour clock.) If you use UnixWare v2.1 functions to process date data, dates cannot exceed January 19, 03:14:07, 2038 GMT. Your CONVERSANT application can, however, process dates past this date by switching to the methods described in "Alternative Methods".

Table 2. Range Supported by UnixWare v2.1 Operating System

Earliest date supported	Last date supported
January 1, 00:00:00 1970 (GMT)	January 19, 03:14:07 2038 (GMT)

How UnixWare v2.1 Calculates Time

The UnixWare v2.1 operating system calculates the current time based on the starting point of January 1, 00:00:00, 1970 GMT (referred to as the *Epoch*). To determine the current day, the UnixWare v2.1 operating system keeps track of the number of seconds that have occurred since the Epoch in a data type *time_t*, which is defined with a 32-bit internal date representation.

Because the data type *time_t* is based on a signed 32-bit value, the maximum date that UnixWare v2.1 can represent is January 19, 03:14:07, 2038 GMT. You can set the UnixWare v2.1 operating system date to any point in this range and have accurate results regarding the system day and time. However, you cannot use UnixWare v2.1 functions to process dates exceeding the last supported date of January 19, 03:14:07, 2038 GMT.

Script Builder Example

The Script Builder *datetime_u* and *u_datetime* external functions are used to process dates and could be involved in processing values that exceed the last date supported by UnixWare 2.1. These external functions do not work if the date converts to a UnixWare v2.1 time that is greater than this value.

For example, in an application that requires adding 30 days to a date, CONVERSANT Script Builder application developers might have used the *datetime_u* and *u_datetime* functions to handle date arithmetic as follows:

1. The *datetime_u* function converts the date (in *CCYYMMDD* format) and time (in *HHMMSS* format) to the UnixWare v2.1 representation of time as the number of seconds since the Epoch.

2. Thirty days is added by multiplying 30 times the number of seconds in a day and adding that value to the UnixWare v2.1 time.
3. The *u_datetime* function converts the UnixWare v2.1 time (in seconds since the Epoch) back to a regular date (in *CCYYMMDD* format) and time (in *HHMMSS* format).

If the value achieved in step 1 or step 2 is greater than the value for January 19, 03:14:07 2038 GMT, the *datetime_u* and *u_datetime* functions will not work.

Voice@Work Example

The Voice@Work Set and Test node allows you to perform date arithmetic by creating branches. You can, for example, create a branch to add or subtract a number of days from a given date. Like the Script Builder functions described above, the Set and Test node converts the date to a UnixWare v2.1 representation of time as the number of seconds occurring since the Epoch. The node then adds or subtracts the appropriate number of seconds before converting the value back to a date. Node branches that handle values exceeding the value for January 19, 03:14:07 2038 GMT will not work.

Note on Simulation: The simulation feature in Voice@Work appears to correctly handle date values that exceed January 19, 03:14:07 2038 — it does not recognize if a date value in a Set and Test node exceeds this last supported date. Keep in mind that even thought the node branches appear to work correctly in the simulation, they do not work correctly on the actual CONVERSANT system.

Alternative Methods

If your application must process dates beyond the last date supported by UnixWare v2.1, you can use the following alternatives:

- Use the ORACLE database. This database has many date functions that can be accessed by writing a C-language data interface process (DIP). CONVERSANT can call this DIP to handle date arithmetic. Some ORACLE date functions are listed below. See the ORACLE documentation for more information on date functions.
  - ADD_MONTHS — to add some number of months to a given date
  - LAST_DAY — to compute the last day of the given month
  - MONTHS_BETWEEN — to compute the number of months between two given dates
  - NEW_TIME — to compute the date and time in a different time zone
  - NEXT_DAY — to compute the first day of the week that is equal to or later than a given day
- Use your own date processing functions to manipulate dates and handle any date arithmetic needed by your applications. Ensure that the functions correctly handle calculations involving leap years, if appropriate.

Areas Requiring Additional Consideration

This section describes additional areas of your system that you should be aware of when preparing your system for year 2000 compliancy. These areas are minor and should not impact customer applications. Some areas are merely conditions you should note, and others are areas that have been fixed by remote-field update.

Areas to Note

Evaluate the two conditions described in this section and determine if either could impact your system.

Time Zone Differences on 12/31/1999 and 1/1/2000

Be aware that some of your applications could be affected because of different time zones. During either the last hours of December 31, 1999, or the beginning hours of January 1, 2000, the following two areas could yield inaccuracies if an application is using two-digit years:

— Applications inserting a two-digit year into a Script Builder database table

— Applications accepting a two-digit year in a Script Builder Host date field (the Y format for the year field) from an IBM host

NOTE:
Using four-digit years will prevent these errors from occurring.

In both types of applications, the CONVERSANT system converts the two-digit year to a four-digit year by adding the current century, either “19” or “20”, to the front of the two-digit value. The CONVERSANT system uses Greenwich Mean Time (GMT) to determine the current century. Inaccuracies can occur because of the time difference between midnight GMT and midnight for the time zones for your applications.

At 12:00 a.m. (midnight) on 1/1/2000 in the GMT zone, the CONVERSANT system will begin to insert the century digits of “20” to all two-digit years, regardless of the time zones in which your applications are running.

For example, if the application is in Tokyo, Japan, it will be 9:00 a.m. on 1/1/2000 when it is 12:00 a.m. (midnight) GMT. Therefore, during the first nine hours of 1/1/2000 in Tokyo, you could have applications that will still be assuming century digits of “19” when the current century for that location has already changed to 2000. Conversely, if the application is in Denver, North America, 12:00 a.m. (midnight) for that system will occur seven hours after it is midnight GMT. Therefore, during the last seven hours of 12/31/1999 in Denver, you could have applications that will be assuming century digits of “20” while the current year for that location is still 1999.

Table 3 shows the relation of GMT to some sample time zones and the hours that are vulnerable for this kind of inaccuracy on 12/31/1999 and 1/1/2000.

NOTE:
The times given in the table do not reflect daylight savings time.

Table 3. Time Zones

Hourly Difference from GMT	Cities	Time When It Is 12:00 am GMT	Window for Error
-8 (Pacific)	Seattle Los Angeles San Diego	4:00 pm on 12/31/99	Last 8 hours of 12/31/99: 4:00 pm to 12:00 am 1/1/2000
-7 (Mountain)	Salt Lake City Denver Phoenix	5:00 pm on 12/31/99	Last 7 hours of 12/31/99: 5:00 pm to 12:00 am 1/1/2000
-6 (Central)	Chicago St. Louis New Orleans	6:00 pm on 12/31/99	Last 6 hours of 12/31/99: 6:00 pm to 12:00 am 1/1/2000
-5 (Eastern)	New York City Washington DC Orlando	7:00 pm on 12/31/99	Last 5 hours of 12/31/99: 7:00 pm to 12:00 am 1/1/2000
-3	Brasilia Buenos Aires	9:00 pm on 12/31/99	Last 3 hours of 12/31/99: 9:00 pm to 12:00 am 1/1/2000
0 GMT	**Greenwich London**	**12:00 am (midnight 12/31/1999)**	**None**
+1	Berlin Paris	1:00 am on 1/1/2000	First 1 hour of 1/1/2000: 12:00 am to 1:00 am
+5.30	Bombay New Delhi	5:30 am on 1/1/2000	First 5 1/2 hours of 1/1/2000: 12:00 am to 5:30 am
+9	Tokyo Osaka	9:00 am on 1/1/2000	First 9 hours of 1/1/2000: 12:00 am to 9:00 am
+10	Melbourne Sydney	10:00 am on 1/1/2000	First 10 hours of 1/1/2000: 12:00 am to 10:00 am

Datakit and uucico Command

Customers who have a Datakit connection to the INTUITY CONVERSANT system (mostly AT&T or internal Lucent Technologies customers), use a package called *Commkit Host Interface to AT&T Data Switch Package.* This package overwrites some UnixWare files on the system, such as uucico and uucp, with versions that have been altered to work with Datakit. The INTUITY CONVERSANT System V7.0 contains the standard UnixWare version of these files, which have been made year 2000 compliant. Because the V7.0 files do not contain the Datakit alterations, your system cannot work with Datakit. If the customer loads the V7.0 onto a system with the Commkit package, failures will occur when a user attempts to use the uucico command across the Datakit network.

Preventative Action: Contact the Commkit vendor and find out if they have a version that is year 2000 compliant. If one is available, reinstall it after you have installed INTUITY CONVERSANT System V7.0. If there is not a version that is year 2000 compliant, you will have to choose between Datakit access and year 2000 compliance for the uucico command.

Areas Fixed by Remote-Field Update

This section describes areas that have been fixed in the remote-field update CONVERSANT Version 7.0 RFU+A, which is being sent to all existing customers as a change notice. Some alternative or preventative actions are given for locations that do not yet have the update installed. To determine if your system has this RFU+A update installed, complete these steps:

1. Log in as **root**
2. At the UnixWare prompt, enter **pkginfo V70rfu+a**

   If the update is installed, the system displays a list of the packages contained in the V7 RFU+A set.

   If the update is not installed, the system displays the following message:
   `UX:pkginfo: ERROR: information for "V70rfu+a" was not found`

When Changing the Date for Year 2000 Testing

If you test your applications for year 2000 issues, you will set your system date ahead in order to test. The datetime option of the sysadm utility functions correctly except in the following unique case: when the current date displayed through the sysadm utility is the last day of the month, and that last day is the 28th, 29th, or 30th of the month (in other words, it is the last day of a month with less than 31 days). In this case, you cannot set the date to the 31st of a month with 31 days. For example, if the current date is November 30, 1998 (November has only 30 days), you cannot set the date to December 31, 1999.

Alternative Action: As long as the current date is not the last day of a month with less than 31 days, you do not need to use an alternative action. However, if the current date meets the criteria shown above and you want to change the date to the 31st, use this procedure:

1. Change the date to a day other than the last day of the month (such as the first day of the next month).
2. Save the screen.
3. Change the date to the 31st of the desired month and year.

When Specifying Multiple Dates as Holidays

When you are using Script Builder to specify a date to be handled as a holiday, the system requires you to enter a four-digit year for the first holiday date that you specify. However, if you save that holiday setting and then specify one or more additional dates as holidays, the system will accept some two-digit years if you enter one by mistake. In such circumstances, the system will accept any two-digit year that does not start with a zero. Even though the system allows you to enter two-digit years in such cases, those dates will not receive holiday handling.

Preventive Action: Make sure that you enter four-digit years for all dates that you specify as holidays.

When Using lp Print Command

The header page produced by the lp print command displays 21st-century years as *1xx*. For example, the year 2000 is printed as *100*, 2014 is printed as *114*, and so forth.

For Advanced Users

A

Overview

This appendix contains the following information designed to help advanced users:

- Spoken formats for speaking dates after the year 2000 — Descriptions of the formats for speaking dates after the year 2000 in U.S. English Enhanced Basic Speech and U.S. English Text to Speech.
- Guidelines for testing your applications — General guidelines for testing for year 2000, should you choose to test your own applications. Note that Lucent Technologies *strongly recommends* that you contract with a software provider to test your applications.

Spoken Formats for Speaking Dates

This section describes the formats for speaking dates after the year 2000. The current formats take effect after you have loaded the INTUITY CONVERSANT Remote Field Update RFU+D for i.2.1.

Table 1 describes how dates are spoken after 2000 for the formats for U.S. English Enhanced Basic Speech and U.S. English Text to Speech (TTS).

NOTE:
A format ending in "Y" indicates a two-digit year, and a format ending in "YY" indicates a four-digit year.

U.S. English Enhanced Basic speech formats begin with "D", and U.S. English TTS formats begin with "A".

Table 1. Formats for Speaking Dates

Date Formats	Years	Spoken Formats	Examples
2-digit formats:	2000	zero-zero	"zero-zero"
DMDY, DMSPDY, ADMDY, or ADMSPDY	2001 – 2009	zero-<*year*>	"zero-five" for 2005 (Previously "oh-<*year*>" for US English Enhanced Basic Speech)
	> 2009	<*year*>	"ten" for 2010
4-digit formats:	2000	Two thousand	"two thousand" (Previously "twenty zero-zero" for ADMDYY format)
DMDYY, DMSPDYY, ADMDYY, or ADMSPDYY	2001 – 2009	Two thousand <*year*>	"two-thousand-five" for 2005 (Previously "twenty-oh-<*year*> for US English Enhanced Basic Speech and ""twenty-zero<*year*>" for US English TTS)
	> 2009	Twenty-<*year*>	"twenty-ten" for 2010

Guidelines for Testing Your Applications

You are responsible for ensuring that your INTUITY CONVERSANT custom applications can continue to operate through the year 2000. To perform this testing, Lucent Technologies *strongly recommends* that you work with a software provider. If you choose to do this work yourself, we offer these general guidelines for testing for year 2000.

Use the following steps as a guide in testing applications for year 2000:

NOTE:
All year 2000 testing should be done on a machine that does *not* take live call traffic at any time, either during or after your testing.

1. Perform a complete backup (mkimage) of the system. This step is critical because you will need to restore your system from this backup after you are done testing. Some features, such as reports or error logging, might not operate correctly after you have set the system date ahead to 2000 and then back to the current year. For instructions on backing up your system, see the section on common system procedures in *INTUITY CONVERSANT System Version 7.0 System Reference*, 585-313-205.
2. Have a written test plan ready. With the system set at the current date, test all applications, custom reports, custom menus, and so on. Ensure that all applications are working. Record your results on the test plan.
3. Set the system date to December 31, 1999, at 11:00 p.m. Remember that if the current date is the last day of a month that has less than 31 days, you must first set the date to a different date before setting it to December 31. See "Areas Requiring Additional Consideration" for details.

   Note too that we recommend setting the time to 11:00 p.m. If you set the system time too close to midnight, some UnixWare processes might fail. By setting the time to 11:00 p.m., the system will advance normally to midnight without these failures.

   To set the date and time ahead, do the following:

   a. Log in as **root**
   b. At the UnixWare prompt, enter **init 1** so that you are in single-user mode.
   c. At the `Login:` prompt, enter **root**
   d. At the UnixWare prompt, enter **su - sysadm**

      Your user ID is changed to sysadm, and the sysadm screens are displayed.

   e. Select `system_setup` and press ENTER.
   f. Select `datetime` and press ENTER.

g. Select `set` and press ENTER.

The Set System Date and Time Information screen is displayed.

h. Change the date and time.

i. Press F3 (Save) to save your changes.

The system displays a message confirming the new date and time.

j. Press F7 (Cmd-Menu).

The Command Menu is displayed.

k. Select `exit` and press ENTER

You are returned to the UnixWare prompt.

4. Shut down and restart the system. This step ensures that all system processes are updated with the new date and time of the system.

CAUTION:
If you do not shut down and restart the system after you have set the date ahead, some UnixWare processes could fail and compromise your test efforts.

To shut down and restart the system, follow these steps:

a. At the UnixWare prompt, enter **cd /**

b. At the next UnixWare prompt, enter **/etc/shutdown –g0 –y**

After a few moments, the system displays the following message:

```
Press any key to reboot.
```

c. Press any key to reboot.

5. After the system has restarted, begin testing custom applications and all other components that you tested in Step 2. Be sure to do the following:

- Have a written test plan and record your results.
- Start your testing at a time before your system time reaches midnight, and continue to test through the rollover to 2000.
- Ensure that some test calls begin in year 1999 and end in 2000.
- Continue to run calls through the system for some time after the system date reaches 2000.

6. Review the results of the testing in Step 5 with that done in Step 2. You should expect that your custom applications, reports, and so forth all work the same before and after 2000. All custom menus or commands that accept years should allow data to be entered as “2000” or “00”, whichever is appropriate.

7. When you are satisfied that your custom applications work beyond 2000, set the system back to the current date and time using the **sysadm** command:
    a. Log in as **root**
    b. At the UnixWare prompt, enter **init 1** so that you are in single-user mode.
    c. At the `Login:` prompt, enter **root**
    d. At the UnixWare prompt, enter **su - sysadm**

       Your user ID is changed to sysadm, and the sysadm screens are displayed.
    e. Select `system_setup` and press ENTER.
    f. Select `datetime` and press ENTER.
    g. Select `set` and press ENTER.

       The Set System Date and Time Information screen is displayed.
    h. Change the date and time.
    i. Press F3 (Save) to save your changes.

       The system displays a message confirming the new date and time.
    j. Press F7 (Cmd-Menu).

       The Command Menu is displayed.
    k. Select `exit` and press ENTER

       You are returned to the UnixWare prompt.
8. Restart the system:
    a. At the UnixWare prompt, enter **cd /**
    b. At the next UnixWare prompt, enter **/etc/shutdown –g0 –y**

       After a few moments, the system displays the following message:

       `Press any key to reboot.`
    c. Press any key to reboot.
9. Restore the system from the mkimage tape. For instructions on restoring your system, see the section on common system procedures in *INTUITY CONVERSANT System Version 7.0 System Reference*, 585-313-205. If you do not restore your system from the mkimage tape, the system may not operate correctly, as some files on the system now have timestamps in the future.