

AUG 02 1999  
STA# 4

4

ENGINEERING DATA TRANSMITTAL

Page 1 of 1  
1. EDT 626713

2. To: (Receiving Organization) <b>Distribution</b>	3. From: (Originating Organization) 83100/TWRS Upgrades	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: Project W-151	6. Design Authority/ Design Agent/Cog. Engr.: JH Bussett	7. Purchase Order No.: N/A
8. Originator Remarks: Attached is the Year 2000 Compliance Assessment for Project W-151.		9. Equip./Component No.: N/A
11. Receiver Remarks:    11A. Design Baseline Document? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		10. System/Bldg./Facility: Year 2000/241-AZ
		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: N/A

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	HNF-4800	N/A	0	Project W-151 Tank 101-AZ Waste Retrieval System Year 2000 Compliance Assessment Project Plan	NA	1,2	1	1
2				Signed "Application for Permission to Use Your Copyrighted Material" from Mt Fury Company, Inc.	NA	3	6	6
3				Signed "Application for Permission to Use Your Copyrighted Material" from Royce Instruments Corporation	NA	3	6	6

16. KEY		
Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)											
(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
		Design Authority									
1,2	1	Design Agent	JH Bussett	7/16/99				Central Files B1-07			
1,2	1	Cog. Eng.	J. Carey	7/30/99				Y2K Project File H7-06			
1,2	1	Cog. Mgr.	R. Bussell	7/30/99	55-13	1,2	1	WD Winkelman	55-05	7/30/99	55-05
		Safety	T. Laney	55-05				GR TAR DIFF	55-05		
		Env.	DW Reberger	55-13							

18. JH Bussett Signature of EDT Originator Date: 7/30/99	19. RB Bussell Authorized Representative for Receiving Organization Date: 7/30/99	20. Dan Reberger Design Authority/Cognizant Manager Date: 7/30/99	21. DOE APPROVAL (if required) Ctrl. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
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Date: 7/14/99

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Title of work or project in which this material will be included: \_\_\_\_\_

The Y2K Compliance Statement will be included as an appendix to a project Y2K assessment.  
The title of the document will be Project W-151 Tank 101-A2 Waste Retrieval System Year  
2000 Compliance Assessment Project Plan. The internal document number is HNF-4800.

Estimated publication date: 7/18/99 Author: JH Bussell

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Signature: *James Bussell*

Credit line (if required): \_\_\_\_\_

Application approved by:

Name: *David R. Payne* David F. Payne Date: 7/14/99

Company Name: *Mt Fury Company* Signatory's Position: *President*

Signature: *David R. Payne* (on behalf of) \_\_\_\_\_

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Date: 7/14/99

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Title of work or project in which this material will be included:

The Y2K Compliance Statement will be included as a appendices to a project Y2K assessment.
The title of the document will be Project W-151 Tank 101-AZ Waste Retrieval System Year 2000 Compliance Assessment Project Plan. The internal document number is HNF-4800.

Estimated publication date: 7/18/99 Author: JH Bussell

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Please Return by FAX,
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Name: James Bussell MSIN: R3-47 Date: 7/14/99

Signature: [Handwritten Signature]

Credit line (if required):

Application approved by:
Name: DAVID RADLE Date: 7-15-99

Company Name: ROYCE INSTRUMENT CORP Signatory's Position: ENGINEERING MANAGER

Signature: [Handwritten Signature] (on behalf of) ROYCE INSTRUMENT CORP.

**PROJECT W-151**  
**TANK 101-AZ WASTE RETRIEVAL SYSTEM**  
**YEAR 2000 COMPLIANCE ASSESSMENT PROJECT PLAN**

**Prepared by:**

**J.H. Bussell**  
**Numatec Hanford Co.**

**July 14, 1999**

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## 1.0 SCOPE

This assessment describes the potential Year 2000 (Y2K) problems and describes the methods for achieving Y2K compliance for Project W-151, Tank 101-AZ Waste Retrieval System. The purpose of this assessment is to give an overview of the project. This document will not be updated and any dates contained in this document are estimates and may change. Two mixer pumps and instrumentation have been or are planned to be installed in waste tank 101-AZ to demonstrate solids mobilization. The information and experience gained during this process test will provide data for comparison with sludge mobilization prediction models and provide indication of the effects of mixer pump operation on an Aging Waste Facility tank.

A limited description of system dates, functions, interfaces, potential Y2K problems, and date resolutions is presented. The project is presently on hold, and definitive design and procurement have been completed. This assessment will describe the methods, protocols, and practices to ensure that equipment and systems do not have Y2K problems.

## 2.0 GENERAL SYSTEM DESCRIPTION

Project W-151 has installed two mixer pump assemblies in tank 101-AZ and associated variable frequency drives. Additional instrumentation has been or is planned to be installed in the tank to measure sludge mobilization and structural effects from jet forces. Two data acquisition systems have been installed to monitor the results of mixer pump tests. One of the systems will be used to provide process monitoring and the other system will monitor sludge mobilization and solid suspension. The electrical substation for this tank farm has been upgraded to provide power for the mixer pumps and associated loads in addition to existing electrical loads. All process instrumentation and equipment that is not degraded by radiation exposure has been installed in tank 101-AZ. The following items will be installed when process test is scheduled to be done; an in-tank camera, two temperature probes with strain gages, and three Ultrasonic Interface Level Analyzer (URSILLA) probes.

## 3.0 ASSESSMENT OF YEAR 2000 (Y2K) COMPLIANCE

The equipment and instruments described in this report are a non-critical system. The consequences of failure of the equipment due to a Y2K problem are the delay of the process test and a loss of data during a segment of the process test. A more detailed description of equipment and instruments installed by Project W-151 can be found in the project safety analysis [Noorani, 1998]. Therefore, no formal Y2K testing is required and the Y2K compliance certifications contained in the appendices of this document are accepted as-is.

### 3.1 Mixer Pumps and Variable Frequency Drives

Lawrence Pumps and Reliance Electric<sup>®</sup> provided the two mixer pumps and associated variable frequency drives. The mixer pumps also include a motor and variable frequency drive to rotate the whole mixer pump assembly. The mixer pumps have been installed. The VGI "series" variable frequency drive is used for each of the mixer pump motors and the GP-2000 "series" variable frequency drive is used with each of the mixer pump rotational motors. The variable frequency drives are listed as Y2K compliant by their manufacturer. The Y2K compliance

statement says that the variable frequency drives contain "no clocks." This information is in Appendix A. A detailed description of the variable frequency drives can be found in supplement 15 of vendor information (VI) file 22515.

### **3.2 Suspended Solids Profile (SSP) Instrumentation**

Mt. Fury Company, Incorporated provided the suspended solids profile (SSP) instrumentation. This instrument measures the suspended solids in the waste. The instrument communicates with a personal computer (PC) via a serial communication link and the PC collects the data for a profile measurement. The software program that processes the measurements is called Data\_Pro. The company's Y2K statement is in Appendix B. A detailed description of instrument and software can be found in supplements 41 and 45 of VI file 22515.

### **3.3 Ultrasonic Interface Level Analyzer (URSILLA)**

Royce Instrument Corporation provided the ultrasonic interface level analyzer (URSILLA) instrumentation. The instrument uses ultrasonic sound to locate interfaces in the waste. These instruments communicate to a PC via a serial communication link. The manufacturer provided DOS-based software to collect data from the instruments and display a profile. The software uses the system time and date from the PC to date stamp the displayed profiles. The company's Y2K statement is contained in Appendix C. A detailed description of the instrument and software can be found in supplements 34 and 40 in VI file 22515.

### **3.4 Process Control Computer**

The process control computer is a Dell® personal computer, model GX1 with a 450-MHz processor clock speed. Dell Computer® states that the GX1 series of PCs are year 2000 compliant and no further changes are required. All released versions of BIOS for this model are Y2K compliant. Dell Computer's Y2K compliance statement is in Appendix D and can be found by searching for the GX1 series of PCs at universal resource locator (URL):

<http://support.dell.com/advisor>. The computer is used to provide the human-machine interface (HMI) for the measured process variables, the tank temperature profiles, the measured "bending" of the strain tank temperature profile trees, and other measured variables. The process computer processes gamma profile measurements made by the sludge mobilization carts. See section 3.6. The computer contains the following options:

1. Level 2 Cache: 512KB
2. System Memory: 128MB ECC SDRAM
3. Video Memory: 8MB SGRAM
4. Hewlett Packard® CD-Writer Model #8100
5. Sony® CD-ROM CDU701
6. Hard Drive: Maxtor® 9.0 G
7. Network Card: 3COM® Fast Etherlink XL NIC (3C905B-TX)
8. Sound Card: CrystalWare® Audio

The process computer's operating system is Microsoft Windows NT 4.0<sup>®</sup>. The operating system will require upgrading to Service Pack 4 or 5 to be Y2K compliant. The Y2K compliance statement is in Appendix E. Intellution FIX WIN95/98/NT<sup>®</sup> version 6.15 is used for the HMI. Intellution FIX WIN95/98/NT<sup>®</sup> version 6.15 is Y2K compliant. The Y2K compliance statement for Intellution FIX WIN95/98/NT<sup>®</sup> version 6.15 is in Appendix F and can be found at URL: <http://www.intellution.com/solutions/year2000/Y2Ktable.asp>. Additional programming is done in Microsoft Visual Basic 4.0<sup>®</sup> (32-bit for Windows<sup>®</sup> operating systems). Microsoft Visual Basic 4.0<sup>®</sup> is Y2K compliant if certain programming conventions are followed. The Y2K compliance statement for Microsoft Visual Basic 4.0<sup>®</sup> is in Appendix G. Additional information on the required programming conventions is found at URL: <http://support.microsoft.com/support/kb/articles/Q162/7/18.asp>.

### **3.5 SSP/URSILLA Computer**

The SSP/URSILLA computer is a Dell<sup>®</sup> PC, model GX1 with a 350-MHZ processor clock speed. Dell Computer<sup>®</sup> states that the GX1 series of PCs are year 2000 compliant and no further changes are required. All released versions of BIOS for this model are Y2K compliant. Dell Computer's<sup>®</sup> Y2K compliance statement is in Appendix D and can be found by searching for the GX1 series of PCs at URL: <http://support.dell.com/advisor>. The computer is used to obtain suspended solids profiles and interface profiles using URSILLA. The operating system for this computer is Windows 98<sup>®</sup>. This operating system is Y2K compliant and the Y2K compliance statement is in Appendix H.

### **3.6 Sludge Mobilization Cart**

The mobilization cart consists of a cable winch assembly, a Cadmium Telluride gamma detector in a tungsten-shielded probe assembly, a NIM bin with nuclear counting electronics, and data acquisition modules to convert analog signals to a serial digital signal, RS-485. The process computer collects three streams of data as the gamma profile measurements are made; probe position, detector count rate, and detector dead time. The instruments in the sludge mobilization cart do not process dates and are Y2K compliant.

### **3.7 Other Process Instruments**

Other process instrumentation may contain smart instruments that contain microcontrollers or microprocessors. In general, these types of instruments do not contain real-time clocks.

## **4.0 TEST PLAN**

No special testing Y2K testing is planned. However, all applicable Y2K related dates will be tested as part of the system acceptance testing.

## **5.0 YEAR 2000 (Y2K) ACTIVITIES, MAJOR MILESTONES, AND DELIVERABLES**

No special activities are planned.

## **6.0 SCHEDULE**

No special activities are planned for the project.

## 7.0 Key Project Documents and Other References

- \_\_\_\_\_, "HOWTO: Prepare Visual Basic Applications for the Year 2000," knowledge base article Q162718, (available at <http://support.microsoft.com/support/kb/articles/q162/7/18.asp>) Microsoft Corporation.
- Noorani, Y. G., 1998, "Mixer Pump Test (241-AZ-101) Safety Analysis," HNF-SD-WM-BIO-001, Addendum 4, Revision 1, Fluor Daniel Hanford Company, Richland, Washington.
- Nordquist, E. M., Nguyen, Q. H., 1996a, Software Configuration Management Plan for Project W-151 Mixer Pump Demonstration, HNF-SD-CSCM-035, Rev. 0, Numatec Hanford Co., Richland, Washington. [This plan provides information on the operating software that was going to be used for the process computer in 1996. Since that time the operating system and the computer has been upgraded to be Y2K compliant.]
- Nordquist, E. M., 1996b, Project W-151 Checkout-Testing Plan, WHC-SD-W151-TP-003, Rev. 0A, Westinghouse Hanford Co, Richland, Washington.
- Nordquist, E. M., 1997, Tank 101-AZ Waste Retrieval System Functional Design Criteria, HNF-SD-W151-FDC-001, Rev. 4, Numatec Hanford Co., Richland, Washington.
- Nordquist, E. M., 1999, Documentation Required for Acceptance for Beneficial Use of Project W-151, Tank 101-AZ Waste Retrieval System, HNF-SD-WM-ABU-023, Rev. 1, Numatec Hanford Co., Richland, Washington. [This document contains as master list of most documents created by the project including drawings.]
- \_\_\_\_\_, Project W-151 Vendor Information File, Vendor Information File 22515.

## Appendix A Reliance Electric's<sup>®</sup> Y2K Compliance Statement

Reliance Electric is a division of Rockwell International Corporation. The following text was downloaded from their Y2K web site at URL:

<http://domino.automation.rockwell.com/webstuff/Y2K.nsf>.

### Year 2000 Status Definitions

#### **Ready:**

The specified series and versions of the listed product are Year 2000 Ready. "Year 2000 Ready" means:

1. The product will provide valid and correct results with reference to the input, processing, and output of the date data which references a given century provided that 1) interfacing hardware, firmware and software will properly exchange date information with the Rockwell Automation product, 2) interfacing hardware, firmware and software will not impact or otherwise impede the performance of the Rockwell Automation product and 3) In all interfaces and data storage, the century in any date will be specified either explicitly or by unambiguous algorithms or inferencing rules.
2. No valid value for current date will cause any interruption in operation.
3. Date-based functionality will behave consistently for dates prior to, during and after Year 2000.
4. Year 2000 will be recognized as a leap year.

The Year 2000 Status Definition "Ready" above applies only to the individual Rockwell Automation product listed and only to the specific version, series or release specified, provided that the product is used properly in accordance with industry practices and product information provided by Rockwell Automation. It does not apply to individual components within the product should they be used independently of the product or to the larger system of which the product may form a part.

#### **Not Ready:**

The product does not adhere to one or more of the "Ready" criteria. The problem cannot be remedied.

#### **Has Known Issues:**

The product does not adhere to one or more of the "Ready" criteria. The problem cannot be remedied, however, the nature of the issue(s) is such that the product may or may not be adequate for use after December 31, 1999 depending upon your specific application and functional requirements.

#### **2 Digit Date:**

The product has a two digit date (ex: 99 for 1999) and does not recognize a century. The product will rollover from 99 to 00. It will recognize leap year based on the assumption that every 4th year is a leap year. The Year 2000 is recognized as a leap year. The product may or may not be adequate for use after December 31, 1999 depending upon your specific application and functional requirements.

#### **Display Only:**

The product has been tested at the revision level indicated. The product displays date information to the user for visual purposes only. This date information is not actively used in the product other than for display purposes. The product may or may not be adequate for use after December 31, 1999 depending upon your specific application and functional requirements.

#### **No Clock:**

The product does not contain a real-time clock (RTC). Therefore, the product does not have any date-specific functionality and is not affected by changes in dates.

#### **Obsolete/Not Tested:**

These products are no longer manufactured and cannot be ordered from Rockwell Automation. They have

**Evaluation:**

Products with an "Evaluation" status are either currently being tested for any Year 2000 implications or being evaluated to determine the need for future testing. Information will be available as the evaluations proceed.

Please note that checking the Year 2000 status of each of your Rockwell Automation products does not ensure that the equipment or systems into which the Rockwell Automation products are incorporated are Year 2000 ready, even if all elements of the equipment or systems are defined by their vendors as Year 2000 "compliant" or "ready". Depending upon your application, even Rockwell Automation products individually assigned Year 2000 Status Definitions "Ready" may not necessarily work together to read, exchange and use date information. You must check the interaction of all hardware and software components of your equipment and systems to confirm the interoperability of the methods for exchanging and using dates. **DO NOT WAIT**. Check the Year 2000 performance of your equipment or system as soon as possible.

**Year 2000 Status Definitions**

Product Description	Catalog/Bulletin Number	Status	Notes
<b>STANDARD DRIVE PRODUCTS</b>			
<b>AC Drives</b>			
	VVI	No Clock	
	1VTxxxx	No Clock	
	2VTxxxx	No Clock	
	3VTxxxx	No Clock	
	4VTxxxx	No Clock	
	5VTxxxx	No Clock	
	6VTxxxx	No Clock	
	7VTxxxx	No Clock	
	23Cxxxxx	No Clock	
	24Cxxxxx	No Clock	
	5Vuxxxxx	No Clock	
	GP800	No Clock	
	GP1000	No Clock	
	GP1200	No Clock	

	GP1500	No Clock	
	GP2000	No Clock	
	2GUxxxx	No Clock	
	GP2000	No Clock	
	1ACxxxx	No Clock	
	2ACxxxx	No Clock	
	SP100	No Clock	
	P14X1xxx	No Clock	
	P14X3xxx	No Clock	
	P14Gxxxx	No Clock	
	P56H3xxx	No Clock	
	P56Xxxxx	No Clock	
	SP200	No Clock	
	SP500	No Clock	
	1SUxxxx	No Clock	
	2CK4120	No Clock	
	2DBxxxx	No Clock	
	2DCxxxx	No Clock	
	2DF2282	No Clock	
	P14X3xxx	No Clock	
	P14X4xxx	No Clock	
	P14X9xxx	No Clock	
	P18Gxxxx	No Clock	

	P21Gxxxx	No Clock	
	P25Gxxxx	No Clock	
	P28Gxxxx	No Clock	
	P32Gxxxx	No Clock	
	P56Xxxxx	No Clock	
	<b>SS4000</b>	No Clock	
	<b>GV3000 and OPTION CARDS</b>	No Clock	
	<b>GV3000/SE and OPTION CARDS</b>	No Clock	
	009Rxxxx	No Clock	
	012Rxxxx	No Clock	
	015Rxxxx	No Clock	
	023Rxxxx	No Clock	
	025Rxxxx	No Clock	
	028Rxxxx	No Clock	
	031Rxxxx	No Clock	
	037Rxxxx	No Clock	
	046Rxxxx	No Clock	
	062Rxxxx	No Clock	
	092Rxxxx	No Clock	
	093Rxxxx	No Clock	
	100Vxxxx	No Clock	
	123Rxxxx	No Clock	
	125Rxxxx	No Clock	
	125Vxxxx	No Clock	

	150Vxxxx	No Clock	
	154Rxxxx	No Clock	
	15Vxxxx	No Clock	
	1RGxxxxx	No Clock	
	1Vxxxx	No Clock	
	200Vxxxx	No Clock	
	20Vxxxx	No Clock	
	232Rxxxx	No Clock	
	250Vxxxx	No Clock	
	25Gxxxx	No Clock	
	25Vxxxx	No Clock	
	2AXxxxx	No Clock	
	2CAxxxx	No Clock	
	2CKxxxx	No Clock	
	2CNxxxx	No Clock	
	2CS3000	Has Known Issues	<u>See Reliance Electric Issue #8</u>
	2DFxxxx	No Clock	
	2DVxxxx	No Clock	
	2LBxxxx	No Clock	
	2NBxxxx	No Clock	
	2RKxxxx	No Clock	
	2Slxxxx	No Clock	
	2SRxxxxx	No Clock	
	2STxxxxx	No Clock	

	2TCxxx	No Clock	
	2Vxxx	No Clock	
	300Vxxx	No Clock	
	309Rxxx	No Clock	
	30Vxxx	No Clock	
	30Vxxx	No Clock	
	350Vxxx	No Clock	
	3Vxxx	No Clock	
	400Vxxx	No Clock	
	40Vxxx	No Clock	
	417077xxx	No Clock	
	417708xx	No Clock	
	470Rxxx	No Clock	
	50Rxxx	No Clock	
	50Txxx	No Clock	
	50Vxxx	No Clock	
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	P14Axxx	No Clock	
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	P18Axxxx	No Clock	
	P18Gxxxx	No Clock	
	P21Gxxxx	No Clock	
	P21Lxxxx	No Clock	
	P25Gxxxx	No Clock	
	P25Lxxxx	No Clock	
	P28Gxxxx	No Clock	
	P28Lxxxx	No Clock	
	P32Gxxxx	No Clock	
	P32Lxxxx	No Clock	
	P36Gxxxx	No Clock	
	P36Lxxxx	No Clock	
	P40Gxxx	No Clock	
	P40Lxxxx	No Clock	
	P44Gxxxx	No Clock	
	P56H5xxx	No Clock	
	P56Xxxxx	No Clock	
	LiquiFlo	No Clock	
	HR2000	No Clock	
	HR500	No Clock	
	VC-90	No Clock	
	VGI	No Clock	

	VCI	No Clock	
	VSM 100	No Clock	
	VSM 500	No Clock	
	10SWxxxx	No Clock	
	10SXxxxx	No Clock	
	10XSxxxx	No Clock	
	10XWxxxx	No Clock	
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	11XWxxxx	No Clock	
	19XSxxxx	No Clock	
	19XWxxxx	No Clock	
	21XSxxxx	No Clock	
	21XWxxxx	No Clock	
	29XSxxxx	No Clock	
	29XWxxxx	No Clock	
	32XSxxxx	No Clock	
	32XWxxxx	No Clock	
	38XSxxxx	No Clock	
	38XWxxxx	No Clock	
	52X24011	No Clock	
	52XSxxxx	No Clock	
	52XWxxxx	No Clock	
	58XSxxxx	No Clock	
	58XWxxxx	No Clock	

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	VTAC 2	No Clock	
	VTAC 3	No Clock	
	VTAC 4	No Clock	
	VTAC 5	No Clock	
	VTAC 6	No Clock	
	VTAC 7	No Clock	

## Appendix B Mt. Fury Company's Y2K Compliance Statement

The following statement was found on the company's web site at URL:  
<http://www.mtfury.com/Y2K>:

Mt. Fury Company products subject to Year 2000 compliance are microprocessor based devices, specifically Dosage Supervisor 1 polymer dosage controllers and Profiler sludge/clarity measurement systems. We certify that these products meet the conditions for Year 2000 compliance as defined below. We also supply PC software for these instruments named Data\_Pro, which is also Year 2000 compliant, although the underlying PC hardware is not our responsibility to certify. We agree with the following suggested definitions for elements of "Y2000 Compliance", where applicable to our instruments and software:

1. **GENERAL INTEGRITY:** The transition to the year 2000 will not interrupt the instrument's operation.
2. **DATE INTEGRITY:** The transition to the year 2000 will not cause calculations to be interrupted, and will not cause sequential events from prior dates to be displayed, archived or executed in improper order.
3. **DATA INTEGRITY:** All data will be stored and transmitted in such manner as to ensure that relative time is maintained, and can be explicitly (where the date is stored as an absolute value) or implicitly (where the actual date is based on some other criteria) determined for a defined range of possible dates. None of this is affected by the transition to the year 2000.
4. **LEAP YEAR:** Year 2000 is treated as a leap year.

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## **Appendix C Royce Instrument Corporation's Y2K Compliance Statement**

The following statement was found on the company's web site at URL:  
<http://www.royceinst.com/techbullet.html>.

All of Royce Instrument Corporation's analyzers are inherently capable of handling the year 2000. The firmware in the analyzers does not make use of a calendar in any of its computation or trending information. It uses relative time and not absolute time. It is for this reason, that Royce Instrument Corporation's equipment will NOT have problems due to the turn of the century.

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## Appendix D Dell Computer Corporation's<sup>®</sup> Y2K Compliance Statement

The following text was downloaded from their Y2K web site at URL:  
<http://www.support.dell.com/advisor>.

Dell-branded hardware products shipped on or after January 1, 1997, are eligible to carry the "NSTL Hardware Tested Year 2000 Compliant" logo by virtue of formal testing with, and successful completion of, the National Software Testing Laboratories (NSTL) YMARK2000 test\*. Dell will treat a failure to pass the YMARK2000 test as a covered event under Dell's warranty for the product, subject to the normal warranty limitations.\*\* You can get a complete copy of Dell's limited warranty. Dell-branded hardware products will also recognize the year 2000 as a leap year.

### Previous Products

For Dell-branded hardware products shipped prior to January 1, 1997, that have an upgradable basic input/output system (BIOS), Dell makes available a BIOS upgrade. Although these products may not have been tested under the YMARK2000 test, Dell believes that the hardware would pass the YMARK2000 test, provided the appropriate BIOS upgrade is properly loaded.

For Dell-branded hardware products that do not have an upgradable BIOS, Dell has made available, as a convenience to customers, the Y2000RTC driver and the Dell FIX2000.exe, software utilities designed to assist customers in managing the year 2000 rollover.

### Software

Dell specifically excludes all non-Dell developed software from this compliance statement. All software run on Dell-branded hardware products should be independently verified by customers to be year 2000 compliant.

### Additional Information

If you can't find the information you need online and you still need help, contact a Dell service representative by calling 1-888-560-8324. Please have your express service code or your service tag number handy for faster service.

\*\*The YMARK2000 standard tests the ability of system hardware and firmware to support the transition to the year 2000 (and to recognize leap years, when appropriate, for years 2000 through 2009 inclusive) and not that of options, operating systems or software applications. Dell branded hardware products which pass the YMARK2000 test conform to BSI-DISC PD 2000-1.

\*\*Except for this clarification of Dell's warranty for NSTL logo hardware, all other warranties, conditions and remedies, express or implied, relating to year 2000 readiness or compliance are disclaimed. To make a claim under this warranty for NSTL logo hardware, customers must contact Dell prior to January 1, 2001. To make a claim, write to:

Dell Computer Corporation®  
PO Box 149258  
Austin, Texas 78714-9258  
Attn: Year 2000

Despite a system's ability to pass the YMARK2000 test, actual rollover results in specific operating environments may vary depending on other factors including, but not limited to, other hardware, operating systems, and software applications.

## Appendix E Microsoft Corporation's<sup>®</sup> Y2K Compliance Statement for Windows NT<sup>®</sup> (Test Criteria, Win NT 4.0, Service Packs 3, 4, and 5)

The following text was downloaded from their Y2K web site at URL:  
<http://www.microsoft.com/technet/year2k/product/product.asp>.

### Microsoft Year 2000 Test Criteria

Microsoft understands the critical nature of the Year 2000 issue for organizations. IT professionals responsible for the Year 2000 health of Microsoft products used in their environments need to understand how Microsoft has tested its products. The bulleted list below represents the framework used by Microsoft to test the Year 2000 date handling capabilities of Microsoft products.

- The product stores and calculates dates consistent with a 4-digit format throughout its operational range.
- If the product allows the user to enter a 2-digit short cut for the year, the product recognizes the year consistent with a 4-digit format
- The product will correctly execute leap year calculations.
- The product does not use special values for dates within its operational range for data.
- The product will function into the 21st century, through the end of year 2035.

The results of this testing process can be found in the Microsoft Year 2000 Product Guide. Microsoft continues to test for Year 2000 issues as products ship new versions or service packs.

*Note: all references to "dates" refer to using either 4 digits or 2 digits for the YEAR portion of the date. This testing criteria does not constitute a warranty or certification expressed or implied, of any kind.*

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# Windows NT Workstation 4.0<sup>®</sup> SP3 (English) - Win NT

Product Summary	
Product: Windows NT Workstation Version: 4.0 SP3	Category: Compliant*# Operating System: Win NT
Language: English	Release Date: 29 Jul 1996
Operational Range:	01 Jan 1996 - 31 Dec 2036
Prerequisites:	Windows NT Service Pack 3, and Year 2000 fixes (see below).
Product Dependencies:	None
Clock Dependencies:	System clock
Last Updated:	22 Jul 1999

## Product Details

**Product Maintenance:** While Microsoft continues to recommend that customers install the most current Service Pack/Release for non-Year 2000 reasons, we understand that, for many reasons, this may not be possible. In order to aid our customers' Year 2000 efforts, Microsoft intends to maintain Windows NT Server 4.0 SP3 as compliant# through January 1, 2001. Newer Service Packs are also to be maintained as compliant, and may include additional non-Year 2000 updates. This is intended to minimize the Year 2000 as a reason to upgrade.

### Updated Information

A new issue has been discovered in versions of Outlook Express installed by Internet Explorer 4. Users of Outlook express should consult the [Internet Explorer Product Guide](#) for details. Through our ongoing testing, Microsoft has identified two additional acceptable deviations. (April 1999) These issues are considered to be minor and do not affect the compliance rating of Windows NT 4.0 Service Pack 3.

A year 2000 issue has been discovered in the Jet 3.5 data engine. Microsoft has provided a software update to address this issue. Consult the [MDAC product guide](#) for details.

### Introduction

When users load the Windows NT Workstation 4.0 operating system they are asked to select from many installation options. In addition, Microsoft has made additional Windows NT Workstation 4.0 features available to licensed users via Service Packs, the Windows NT Option Pack and the Windows NT Web site. Because users may have selected a variety of options and installed additional features, all options and features must be considered when assessing Year 2000 readiness status.

Microsoft has determined that Windows NT Workstation 4.0 and some versions of additional Windows NT Workstation 4.0 features have known Year 2000 issues, requiring upgrades. Microsoft is committed to maintaining Windows NT Workstation 4.0 with SP4 as the year 2000 compliant platform and strongly suggests that customers evaluate and deploy SP4. The process for obtaining SP4 can be found at:

[http://www.microsoft.com/support/winnt/sp4\\_central\\_40.htm](http://www.microsoft.com/support/winnt/sp4_central_40.htm)<http://www.microsoft.com/support/winnt/default.htm>. In addition, users should review the [Windows NT Workstation 4.0 SP4 Year 2000 compliance document](#) for additional information.

Microsoft recognizes that, in light of Microsoft's recommendation that users upgrade to Windows NT Workstation Service Pack 4 (SP4), some users of Windows NT Workstation 4.0 would prefer to remain on Service Pack 3 (SP3) until after January 1, 2000. To address the needs of these users, Microsoft has prepared a number of updates to the base Windows NT Workstation 4.0 operating system and Windows NT Workstation 4.0 features. Users should note, however, that:

- Microsoft has assigned a compliance rating of "Compliant#" to Windows NT Workstation 4.0-based systems where these post-SP3 updates have been applied
- Microsoft is committed to maintaining SP4 as the "Compliant" platform.

- The highest compliance rating that Microsoft will assign to a system running Windows NT Workstation 4.0 with SP3 is, "Compliant#."

Further, Microsoft intends to maintain Windows NT Workstation 4.0 with SP3 compliance rating at the "Compliant#" level through January 1, 2001 (for one year after January 1, 2000). Microsoft will do this by producing updates if new year 2000-related issues are discovered that would otherwise cause Microsoft to lower the rating of Windows NT Workstation 4.0 with SP3 below the "Compliant#" level.

The tables included below list the specific options and features (by version) that users of Windows NT Workstation 4.0 SP3 may have installed on their systems and lists the compliance status of each option and feature. Where appropriate, the table describes a procedure for bringing an option or feature to a *Compliant* or *Compliant#* status on a system running SP3.

Note that some options and features of Windows NT Workstation cannot be brought to a *Compliant* status without applying SP4, which Microsoft is committed to maintaining as the Compliant platform. Using the information below, however, the options and features can be brought to at least a *Compliant#* status.

In summary, for users of Windows NT Workstation 4.0 with SP3, the options and features that need to be addressed in order attain a status of *Compliant#* are:

- The base Windows NT Workstation operating system (*Not Compliant*; several updates are required to reach *Compliant#* status)
- *Active Directory Services Interface version 1.0 (Not Tested*; upgrade required to ensure *Compliant* status)
- Microsoft FrontPage 97 (*Not Compliant*; updates required to reach *Compliant* status)
- Microsoft FrontPage 97 Workstation Extensions (*Not Compliant*; upgrade required to reach *Compliant* status)
- Microsoft Internet Explorer version 2.0 (*Not Tested*; upgrade required to ensure *Compliant* status)
- Microsoft Internet Explorer version 3.02 (*Not Compliant*; updates required to reach *Compliant* status)
- Microsoft Internet Explorer version 4.01 (*Not Compliant*; updates required to reach *Compliant* status)
- Microsoft Internet Locator Service version 1.0 (*Not Compliant*; upgrade required to reach *Compliant* status)
- Site Server Express version 2.0 (*Not Compliant*; upgrade required to reach *Compliant* status)

Detailed information about addressing year 2000 compliance issues on a feature-by-feature basis is provided below.

### **Evaluating the Status of a Windows NT Workstation 4.0 Service Pack 3 System**

Microsoft has assigned the base Windows NT Workstation 4.0 operating system (with SP3 installed) a status of *Compliant#*. This status includes options that can be selected during the installation process.

This *Compliant#* status is based on having the following software installed:

- Microsoft Windows NT 4.0 Service Pack 3. Obtain SP3 at:

<http://www.microsoft.com/windows/downloads>

- Windows NT post-SP3 Year 2000 Updates – released on February 26, 1999

An update for the English Language version of Windows NT Workstation version 4.0 Service Pack 3 can be obtained at:

<http://www.microsoft.com/windows/downloads>

or

<ftp://ftp.microsoft.com/bussys/winnt>

- A list of the issues addressed by the post-SP3 Year 2000 Updates is listed below:

#### **1. User Manager Does Not Recognize February 2000 As a Leap Year.**

(Q175093) User Manager and User Manager for Domains will not accept February 29, 2000 as a valid date to expire an account.

- 2. Control Panel Date/Time applet.** (Q180122) The Control Panel Date/Time applet's date displayed may jump ahead one more day than expected. The system date is correct; only the displayed date is wrong.
- 3. Find Files Displays Garbled Date if Year is 2000 or Greater.** (Q183123) When using the Windows NT Find Files or Folders feature, the two-digit abbreviation of the year does not appear correctly.
- 4. Shell Doc Property Dialog: Custom Date Incorrect after Year 2000.** (Q183125) When using the document properties viewer to define a custom property to include a date type in a file, the year may not be saved correctly.
- 5. Year '00' in Office Documents.** (Q184132) When users try to add a Custom Date using the year '00' on the Custom tab of the properties sheet for a Microsoft Office document, they will receive the following error message: "The value entered does not match with the specified type. The value will be stored as text."
- 6. File & Print for NetWare file dates.** (Q186669) The File and Print Services for NetWare (FPNW) service Logout.exe program may report the year incorrectly for files created on or after January 1, 2000.
- 7. Print job date display.** (Q191768) When users view a print job spooled on a different print server, such as Windows 9x or LAN Manager, from a Windows NT client, the date displayed in the print queue may be incorrect and possibly off by one year.
- 8. Problems in Date/Time after Choosing February 29** (Q193056) Several odd behaviors may result if the Date/Time tool in Control Panel is used to select February 29 in a Leap Year.
- 9. NetWare account migration.** (Q193434) Novell NetWare accounts with an expiration date January 1, 2000, or later are migrated to Windows NT with the incorrect expiration date.
- 10. NetWare client time & date synchronization.** (Q194726) When an MS-DOS-based NetWare client attaches or logs on to a Windows NT Workstation computer running File and Print Services for NetWare (FPNW), the client's date and time are not synchronized with that of the server when the server's date and time are beyond 12/31/1999 at 11:59:59pm.
- 11. PS1 compatible machines.** (Q207799) PS1 Compatible machines will not boot if the year is set to 2000.
- 12. Restore log dates.** (Q216916) When files are backed up using NTBackup.exe after 12/31/1999 at 11:59:59pm, and subsequently restored, "year" values will be listed as starting with 1900 in the restore log.
- Users should note that some known issues in the base Windows NT Workstation 4.0 operating system with SP3 are not being addressed, hence the rating of "Compliant#." It is for this reason Microsoft recommends upgrading to Windows NT Workstation Service Pack 4. Listed below are the known acceptable deviations remaining in SP3 after the application of the updates.
    - 1. WINS/DHCP Admin show Expiration Dates incorrectly.** (Q193371) Windows Internet Name Service (WINS) Admin and Dynamic Host Configuration Protocol (DHCP) Service Admin display the expiration dates 2000 through 2009 with only one digit (for example, 1/1/2000 is displayed as 1/1/0 instead of 1/1/00). This is a display issue only.
    - 2. Custom date properties in .DOC property dialog box.** (Q207807) When a Word 97 file is selected on the desktop and the user right clicks on the file, selects "Properties", selects the "custom" tab, and then enters a date with a 2-digit year value of '01', this issue may cause the date to automatically decrement by 1 day when the "Add" button is clicked. This issue only manifests if time zone is set to Far East region time zone (Greenwich Mean Time (GMT)+8 or Greenwich Mean Time (GMT)+9).
    - 3. BIOS Date Value does not Immediately Update on January 1, 2000.** (Q216913) When the Window NT System Time value rolls over from the year '1999' to '2000', the Century Byte value stored in the real time clock (RTC) is not changed until up to one hour later when the time daemon writes out the date. This behavior may cause unexpected behavior under two conditions:
      - A. In a dual boot scenario, the other operating system(s) may not

handle this situation properly. MS-DOS is in this class of operating systems.

- B. Some BIOSes detect this behavior as an invalid date and query the user for the correct date. This would prevent a system from rebooting without user input.

**4. OLE Automation.** In locales where there are other calendars in addition to the Gregorian calendar, application functionality that depends on OLE Automation to interpret 2-digit years does not properly use the date window as set in Control Panel, Regional settings. The result is that the maximum value for the sliding date window is not properly read for Gregorian dates in those locales causing it to fall back to the default value of 2029. This problem would occur only if the date window had been changed from the default value of 1930-2029. See the [OLE Automation](#) white paper for more information.

**5. Incorrect Date Displayed when viewing a saved System Info Report.** (Q218877) Programs that use the COleDateTime function from MFC40.dll may incorrectly parse a date after the year 2000 (02/05/2000 may become 2/05/100). The function assumes that any year passed to it as 2 digits is relative to 1900 and adds 1900 to it. If a four digit year is passed, this function results in the correct 4 digit year. For example, if "02" is passed (for 2002) to the function, it will return a date of "102".

**6. Four Digit Year Format for Non-English Regional Settings.** (Q218941) When certain locale settings (such as Hebrew or Japanese) are used in configuring a system's Regional Settings Short Date Style, users may not be able to choose a four digit year format. However, users can manually enter a four digit date style.

**7. Dates may display improperly using the Configuration Back-up option from the IIS 4.0 HTML Administrator.** (Q230335) When using the Configuration Back-up option from the HTML version of the IIS 4.0 Internet Server Manager it is possible that the date displayed for the stored configuration may display the current date improperly if the configuration was stored on or after 1/1/2000.

**8. MSMQ Err: Error While Creating MSMQ Internal Certificate. Error: 0x8000ffff** (Q230050) When you click Renew Internal Certificate in the Microsoft Message Queue Control Panel utility on February 29 of a leap year (for example 2000, 2004, 2008, and so on), you receive the following error message: Error while creating MSMQ internal certificate. Error: 0x8000ffff.

### **Additional Software Components**

The information below outlines features in addition to the base Windows NT Workstation 4.0 operating system (with SP3) that must be evaluated to determine compliance. Installation options included in the *Compliant#* status of Windows NT Workstation 4.0 (with SP3) are listed in Table 1 (below).

**Table 1.**

Option/Service Name	Compliance Rating
DHCP Relay Agent	Compliant#
DLC Protocol	Compliant
Microsoft TCP/IP Printing	Compliant
NetBEUI Protocol	Compliant
NetBIOS Interface	Compliant
Network Monitor Agent	Compliant
Network Monitor Tools and Agent	Compliant

NWLink IPX/SPX-Compatible Transport	Compliant
Point To Point Tunneling Protocol	Compliant
Remote Access Service	Compliant
Remote Boot Service	Compliant
RIP for Internet Protocol	Compliant
RIP for NWLink IPX/SPX-Compatible Transport	Compliant
Simple TCP/IP Services	Compliant
SNMP Service	Compliant
Streams Environment	Compliant
TCP/IP Protocol	Compliant
Windows Messenger Service	Compliant

In addition to the selectable options offered during installation of the Windows NT Workstation 4.0 operating system, there are additional features of the Windows NT Workstation 4.0 product that may be installed on the Target System. These features have been made available by Microsoft via Service Packs, the Windows NT Option Pack and the Windows NT Workstation Web site.

Table 2 (below) lists the additional features (and their versions) that Microsoft has made available to licensed users of the Windows NT Workstation 4.0 product since its original release. Use this table to verify the compliance of each Windows NT Workstation 4.0 feature and to apply appropriate updates when necessary.

Table 2.

Feature Name	Version	Compliance Rating	Required Actions
Active Directory Services Interface (ADSI)	1.0	Not Tested	Install <u>ADSI 2.0</u>
Active Directory Services Interface	2.0	Compliant	None
Active Directory Services Interface	2.5	Compliant	None
Imaging for Windows	N/A	Compliant	None - the <i>Compliant</i> rating applies to versions that run on Windows NT Workstation 4.0
Microsoft Data Access Components	See Required Actions	See Required Actions	Some versions of MDAC are not compliant. To make MDAC compliant, please review the <u>MDAC product guide</u> for latest information on year 2000 issues and updates for MDAC.
Microsoft Euro Currency Support for Windows NT 4.0	N/A	Compliant	None

Microsoft FrontPage 97	'97'	Not Compliant	To make compliant, install FrontPage 97 Year 2000 updates
Microsoft FrontPage 97 Server Extensions	'97'	Not Compliant	To make compliant, install FrontPage 98 Server Extensions from the Windows NT Option Pack. Also see Note 2.
Microsoft FrontPage 97	'97' with updates	Compliant	To determine that Microsoft Front Page 97 updates are installed, verify the version number of the file named: "(system directory)\system32\fp20tl.dll" is at least 02.00.3002.23. See note 4 for instructions on verifying version numbers of .DLL files.
Microsoft FrontPage 98 Server Extensions	'98'	Compliant	None – Also see note 2.
Microsoft Internet Explorer	Multiple Versions	See Required Actions	Consult the Year 2000 <u>Product Guide</u> for Details Users who wish to install IE 4.01 SP2 or IE 5 Technology without adding IE icons and without making IE the default browser should consult KB article Q224088.
Microsoft Internet Information Server	2.0	Compliant	None
Microsoft Internet Information Server	3.0	Compliant	None
Microsoft Internet Information Server	4.0	Compliant	An additional issue has been identified for IIS4.0. Consult the Not-Fixed Issues list (Issue #7) of this document for details.
Microsoft Internet Locator Service	1.0	Not Compliant	To make compliant, install <u>Internet Locator Service</u> .
Microsoft Internet Locator Service	2.0	Compliant	None
Microsoft Management Console	1.0	Compliant	None
Microsoft Management Console	1.1	Compliant	
Personal Web Services	4.0	Compliant	Consult the following KB for required updates to MSMQ: Q230050
Microsoft Virtual Machine	(Many versions)	See required action for description	Some versions of the Microsoft Virtual Machine, including the versions that shipped with SP4 and with some versions of Internet Explorer, have Year 2000 date-related issues. Please refer to the Microsoft VM year 2000 Product Guide at <u>Microsoft Virtual Machine</u> for details and recommendations to address known issues.

Routing and Remote Access Services	4.0	Compliant	None
Site Server Express	2.0	Not Compliant	To make compliant, install <u>Site Server Express version 3.0</u>
Site Server Express	3.0	Compliant	None - See Note 2
Windows Media Player	6.0	Compliant	None
Windows Scripting Host	1.0	Compliant	None
Zero Administration Kit for Windows NT 4.0	N/A	Compliant	None -See Note 3

**Appendix:**

For convenience, Table 3 (below) lists features and products that Microsoft has made available on the Windows NT Workstation web site that Microsoft does not consider to be part of the Window NT Workstation 4.0 product for Year 2000 compliance purposes.

Table 3.

Feature/Product Name	Notes
ADSI Implemented in Java	Available only in Beta test versions.
Client 32 support for NetWare	This is a Novell product; consult Novell for compliance information.
Dial-Up Networking Access Service Performance and Security Upgrade	Applies only to Windows 95 should not be present with Windows NT Server 4.0.
I2O (Intelligent I/O Architecture) Drivers for Windows NT	Available only in Beta test versions.
Microsoft Windows NT Services for UNIX	Available only in Beta test versions.
Routing and Remote Access Service Performance and Security Upgrade	This is a collection of hot updates that have no impact on Year 2000 compliance ratings.
Windows NT Server Management Tools for Windows 95	Runs on Windows NT Workstation 4.0 , Windows 98, and Windows 95

**Notes:**

1. To determine which versions of FrontPage Server Extensions are actively in use, run the FrontPage Server Administrator (Fpsrvwin.exe). Click on each of the Web servers or virtual servers (listed in the box in the upper left area) that have been configured with the FrontPage Server Extensions. The version number of the FrontPage Server Extension is displayed to the right of the list. Version numbers where the first digit is '3' or greater resolve known Year 2000 issues (e.g. 3.0.2.1706). If the first digit of the version number is '1' or '2', users should install an updated version of the FrontPage Server Extensions. Refer to <http://www.microsoft.com/frontpage/> for more details.
2. There is no Content Analyzer feature in Site Server Express 3.0. An updated Content Analyzer is available from the Windows NT Server Service Pack 4 Download page.

<http://www.microsoft.com/support/winnt/default.htm>. Click on Begin the Download Process, Select Encryption Level, and Accept the License agreement. The following page allows the user to download the updated Content Analyzer.

3. The *Compliant* ratings for Zero Administration Kits (ZAK kit) are based on being used with *Compliant* versions of the software configured for installation by the ZAK kit.
4. To verify the version number of a dynamic link library (DLL) file, users should:
  - Start Windows NT Explorer from the "Start/Programs" menu
  - Locate the DLL file to be verified
  - Select the file by pointing the mouse cursor at the file and clicking the left mouse button once
  - Click the right mouse button once to display a menu
  - Select "Properties" from the menu by pointing the mouse cursor at the option and clicking the left mouse button once
  - Select the "Version" tab by pointing the mouse cursor at the tab and clicking the left mouse button once
  - Visually Locate the version number in the field labeled "File Version"

#### Legend of Symbols:

- \* Indicates the product is compliant, with recommended customer action. This indicates a prerequisite action is recommended which may include loading a software update or reading a document.
- # Indicates the product is compliant, with acceptable deviations from Microsoft's standard of compliance. An acceptable deviation does not affect the core functionality (ex: data integrity) or stability (ex: reliability) of the product.
- + Indicates the product is compliant, with pending software updates. Future maintenance actions will be recommended shortly.

**Note:** Compliance ratings given for each product assume that all recommended actions have been taken.

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## Windows NT Workstation 4.0<sup>®</sup> SP4 (English) - Win NT

Product Summary	
Product: Windows NT Workstation Version: 4.0 SP4	Category: Compliant* Operating System: Win NT
Language: English	Release Date: 29 Jul 1996
Operational Range:	01 Jan 1996 - 31 Dec 2036
Prerequisites:	(see below)
Product Dependencies:	None
Clock Dependencies:	System clock
Last Updated:	27 Jul 1999

### Product Details

**Product Maintenance:** While Microsoft continues to recommend that customers install the most current Service Pack/Release for non-Year 2000 reasons, we understand that, for many reasons, this may not be possible. In order to aid our customers' Year 2000 efforts, Microsoft intends to maintain Windows NT Workstation 4.0 Service Pack 4 as compliant through January 1, 2001. Newer Service Packs are also to be maintained as compliant, and may include additional non-Year 2000 updates. This is intended to minimize the Year 2000 as a reason to upgrade.

[This information applies to **Windows NT Workstation 4.0 SP4**]

#### Updated Information

A new issue has been discovered in versions of Outlook Express installed by Internet Explorer 4. Users of Outlook express should consult the [Internet Explorer Product Guide](#) for details. Through our ongoing testing, Microsoft has identified four issues that are addressed by post-Service Pack 4 updates. Microsoft recommends that users evaluate the post-SP4 year 2000 updates and consider deploying them based on their exposure to each issue. The issues are detailed in Step 2 below.

A year 2000 issue has been discovered in the Jet 3.5 data engine. Microsoft has provided a software update to address this issue. Consult the MDAC product guide [HERE](#) for details. Microsoft recently announced the release of Service Pack 5 for Windows NT 4. Service Pack 5 is not required for Year 2000 compliance. Service Pack 5 may provide a more simple Year 2000 remediation process for some customers. Customers should consult the [Windows NT 4 SP5 compliance document](#) in the Year 2000 product guide for details.

#### Introduction

Windows NT 4.0 has had a number of service packs since its release. To reach a compliant state with Windows NT 4.0, Service Pack 4 plus additional Year 2000 software updates must be installed. Additionally, Microsoft intends to maintain the compliance of Service Pack 4 through January 1, 2001, in addition to any subsequent service packs.

When users load the Windows NT Workstation 4.0 operating system on a computer they are asked to select from many installation options. In addition, Microsoft has made additional Windows NT Workstation 4.0 features available to licensed users via Service Packs, the Windows NT Option Pack and the Windows NT Web site. Because users may have selected a variety of options and installed additional features on a given system, all options and features must be considered when assessing the system's Year 2000 readiness status.

Microsoft has determined that Windows NT Workstation 4.0 and some versions of additional Windows NT Workstation 4.0 features have known Year 2000 issues, requiring upgrades. In order to address these known Year 2000 issues, users must first determine the set of options and features that they have installed on a given system (the "Target System") and follow the three-step procedure described below. In some cases the Year 2000 issue can be updated by users applying updates. In other cases, users are instructed to upgrade a feature to a newer version of the feature to address known issues.

The steps identified below take a comprehensive approach to correcting known issues.

- Step 1 prepares the target system for SP4 by installing any upgrades that are needed in addition to SP4.
- Step 2 installs SP4 and the post-SP4 Year 2000 Update to analyze the target system, remove versions that have known issues, and install versions that have no known issues.
- Step 3 then audits the target system. To confirm all known issues have been corrected and steps 1 and 2 have been done correctly, the results of the audit should indicate that only those versions having a "complaint" rating (as identified on the tables below) remain on the target system after Steps 1 and 2 have been completed.

**Important Preliminary Notes:**

- In order to simplify the upgrade process and provide more flexibility to customers, the Y2KSETUP.EXE composite patch has been removed from the recommended upgrade path. Y2KSETUP.EXE was used to install IE4.01 SP1, MDAC 2.0 SP1, and Site Server Express 3.0. We now recommend that customers install these components individually. See Note 7 for additional details.
- Users that have both Microsoft Message Queue Service Version 1.0 and Site Server Express Version 2.0 installed on their Windows NT 4.0 machines should review the Microsoft Knowledge Base article [Q197533](#) before proceeding:

**Step 1**

Microsoft has created Service Pack 4 (SP4) to help users address the majority of Year 2000 compliance issues with their Windows NT Workstation installations in a simple and automated fashion.

SP4 itself will address most known Year 2000 issues. However, users must update or upgrade certain features to their later releases, in addition to applying SP4.

Table 1A (below) lists the Windows NT 4.0 features that must be updated or upgraded in addition to applying SP4, along with specific repair/update instructions.

Table 1B (below) lists the Windows NT 4.0 Optional features that must be updated or upgraded only if previous versions exist on the machine.

Note that these updates and upgrades can be performed either before or after applying SP4 (which is outlined in Step 2).

***Table 1A: System Components.***

Feature Name	Version	Action Required Prior to Step 2
Microsoft Internet Explorer (IE)	Multiple Versions	Upgrade to IE4.01 SP2 or newer including any applicable Year 2000 software Updates. For information on additional Year 2000 Updates for IE, refer <a href="#">HERE</a> . Go <a href="#">Here</a> for IE Downloads. (Users who prefer to remain on IE 4.01 SP1 should refer to the IE Year 2000 Compliance document available <a href="#">HERE</a> for appropriate actions. Additional software updates are required in addition to SP1.) Users who wish to install IE 4.01 SP2 or IE 5 Technology without adding IE icons and without making IE the default browser should consult KB article <a href="#">Q224088</a> .

**Table 1B: Optional Components.**

Feature Name	Version	Action Required Prior to Step 2
Microsoft Data Access Components (MDAC)	Multiple Versions	Install MDAC 2.1 SP1 or newer including any applicable Year 2000 software Updates. For information on additional Year 2000 Updates for MDAC, refer <a href="#">HERE</a> . Go <a href="#">Here</a> for MDAC Downloads (Users who prefer to remain on MDAC 2.0 SP1 should refer to the MDAC Year 2000 Compliance document available <a href="#">HERE</a> for appropriate actions.) A year 2000 update for the Jet3.5 engine has recently been released. (April 1999) Consult the MDAC product guide for details. (MDAC 2.0 SP1 is installed by Y2KSETUP.EXE, see Note 7)
Microsoft FrontPage 97	"97"	Install <a href="#">FrontPage 97 Year 2000 Updates</a> .
Microsoft FrontPage 97 Server Extensions	"97"	Install <a href="#">FrontPage 98 Server Extensions</a> .
Site Server Express	2.0	Uninstall Site Server Express 2.0 and install Site Server Express 3.0. Refer <a href="#">HERE</a> . (Site Server Express 3.0 is installed by Y2KSETUP.EXE, see Note 7)

**Step 2**

Apply SP4 to the Target System. SP4 can be obtained at:

<http://www.microsoft.com/support/winnt/default.htm>

The installation of SP4 applies updates to the base Windows NT Workstation 4.0 product including the installation options. Applying SP4 also updates certain Windows NT Workstation 4.0 features.

Microsoft previously recommended that customers also run Y2KSETUP.EXE. to address the following components: Microsoft Data Access Components, Site Server Express, Microsoft Internet Explorer. These areas are now addressed in step 1. Refer to Note 7 for additional details.

Users should also apply any Windows NT Year 2000 (Y2K) Updates that have been made available post-SP4. The current post-SP4 Y2K updates are listed below.

Current post-SP4 Updates and their respective Knowledge Base (KB) Articles address the following known Year 2000 issues:

Click

[http://www.microsoft.com/windows/downloads/contents/wurecommended/s\\_wuservicepacks/nt4\\_y2kpostsp4/default.asp?site=ntwHERE](http://www.microsoft.com/windows/downloads/contents/wurecommended/s_wuservicepacks/nt4_y2kpostsp4/default.asp?site=ntwHERE) for the catalog of currently available post-SP4 Year 2000 Updates.

(Additional information about these issues can be obtained at

<http://support.microsoft.com/support/>)

**1. BIOS Date Value does not Immediately Update on January 1, 2000. (Q216913)**

When the Windows NT System Time value rolls over from the year "1999" to "2000", the Century Byte value stored in the real time clock (RTC) is not changed until up to one hour later when the time daemon writes out the date. Customers should evaluate their exposure to this issue to determine whether to apply this update. This issue only affects systems with older BIOSes that do not automatically update the century byte on reboot. (Contact your hardware manufacturer for BIOS details.)

**2. MFC40.dll Causes Programs to Display Wrong Date after 01/01/2000. (Q218877)**

An internal function within Mfc40.dll(ColeDateTime) is designed to add 1900 to every 2-digit date that is passed to it. For example, 99 is returned as 1999. If more than 2 digits are passed, nothing is added. Programs that use this function may incorrectly parse a date after the year 2000 (for example, January 1, 2000, may become January 1, 100). This problem has been observed with the following applications: Microsoft System Information (Msinfo32.exe). Click [HERE](#) to download the software update.

**3. MSMQ Err: Error While Creating MSMQ Internal Certificate. Error: 0x8000ffff**

(Q230050) When you click Renew Internal Certificate in the Microsoft Message Queue Control Panel utility on February 29 of a leap year (for example 2000, 2004, 2008, and so on), you receive the following error message: Error while creating MSMQ internal certificate. Error: 0x8000ffff.

**4. Dates may display improperly using the Configuration Back-up option from the IIS 4.0 HTML Administrator (Q230335)** When using the Configuration Back-up option from the HTML version of the IIS 4.0 Internet Server Manager it is possible that the date displayed for the stored configuration may display the current date improperly if the configuration was stored on or after 1/1/2000.

**Step 3:**Overview:

The final step of the process is to audit the target system to verify that Step 1 and Step 2 have been performed correctly.

- Create a list of the Windows NT Workstation 4.0 installation options and additional features installed on the target system.
- Review the compliance status in Tables 2 & 3.
- Confirm that only those versions having a "complaint" rating (as identified on the tables below) remain on the target system after Steps 1 and 2 have been completed.

Detail:

When users load the Windows NT Workstation 4.0 operating system on a computer they are asked to select from many installation options. These options are listed in Table 2 (below). The known Year 2000 issues with Windows NT Workstation 4.0 operating system itself and each of the options listed in Table 2 below should have been updated after SP4 was applied.

**Table 2**

Option/Server Name	Compliance Rating
DLC Protocol	Compliant
Microsoft TCP/IP Printing	Compliant
NetBEUI Protocol	Compliant
NetBIOS Interface	Compliant
Network Monitor Agent	Compliant
Network Monitor Tools and Agent	Compliant
NWLink IPX/SPX-Compatible Transport	Compliant
Point To Point Tunneling Protocol	Compliant
Remote Access Service	Compliant
Remote Boot Service	Compliant
RIP for Internet Protocol	Compliant
RIP for NWLink IPX/SPX-Compatible Transport	Compliant

Simple TCP/IP Services	Compliant
SNMP Service	Compliant
Streams Environment	Compliant
TCP/IP Protocol	Compliant
Windows Messenger Service	Compliant

In addition to the selectable options offered during installation of the Windows NT Workstation 4.0 operating system, there are additional features of the Windows NT Workstation 4.0 product that may be installed on the Target System. These features have been made available by Microsoft via Service Packs, the Windows NT Option Pack and the Windows NT Workstation Web site.

Table 3 (below) lists the additional features (and their versions) that Microsoft has made available to licensed users of the Windows NT Workstation 4.0 product since its original release. Use this table to verify the compliance of each Windows NT Workstation 4.0 feature installed on the Target System.

**Table 3**

Feature Name	Version	Feature Compliance Rating	Notes
Active Directory Services Interface	1.0	Not Compliant	See Note 2
Active Directory Services Interface	2.0	Compliant	
Active Directory Services Interface	2.5	Compliant	
Imaging for Windows	Not Applicable	Compliant	Applies to all versions that run on Windows NT Workstation 4.0
Internet Connection Services for Microsoft Remote Access Service	1.0	Compliant	
Microsoft Data Access Components(MDAC)	Multiple Versions	See Notes for required action	Some versions of MDAC are not compliant. To make MDAC compliant, please review the MDAC Year 2000 Compliance document (click <a href="#">HERE</a> ) for latest information on year 2000 issues and updates for MDAC.
Microsoft Euro Currency Support for Windows NT 4.0	Not Applicable	Compliant	
Microsoft Front Page	1.0	Not Compliant	See Note 2
Microsoft Front Page	1.1	Not Compliant	See Note 2
Microsoft FrontPage 97	"97"	Not Compliant	See Note 2

Microsoft FrontPage 97 Server Extensions	"97"	Not Compliant	See Note 2
Microsoft FrontPage 97	"97" with Updates	Compliant	To determine that Microsoft Front Page 97 updates are installed, verify the version number of the file named: "(system directory)\system32\fp20tl.dll" is at least 02.00.3002.23. See note 6 for instructions on verifying version numbers of .DLL files.
Microsoft FrontPage 98 Server Extensions	"98"	Compliant	
Microsoft Internet Explorer	Multiple Versions	See Notes for required action	Consult the Y2K <a href="#">Product Guide</a> for Details
Microsoft Internet Information Server	2.0	Compliant	
Microsoft Internet Information Server	3.0	Compliant	
Microsoft Internet Information Server	4.0	Compliant	An additional issue has been identified for IIS4.0. Consult Step 2 of this document for details.
Microsoft Internet Locator Service	1.0	Not Compliant	See Note 2. Upgrade available <a href="#">here</a> .
Microsoft Internet Locator Service	2.0	Compliant	
Personal Web Services	4.0	Compliant	Updated in Step 2. Consult the following KB for required updates to PWS: Q230050
Microsoft Management Console	1.0	Compliant	
Microsoft Management Console	1.1	Compliant	
Microsoft Virtual Machine	(Many Versions)	See Notes for Required Action	Some versions of the Microsoft Virtual Machine, including the versions that shipped with SP4 and with some versions of Internet Explorer, have Year 2000 date-related issues. Please refer to the Microsoft VM year 2000 Product Guide at <a href="#">Microsoft Virtual Machine</a> for details and

			recommendations to address known issues.
Routing and Remote Access Services	4.0	Compliant	
Site Server Express	2.0	Not Compliant	See Note 2
Site Server Express	3.0	Compliant	See Note 4
Windows Management Interface (WMI)	1.0	Compliant	
Windows Media Player	6.0	Compliant	To verify that Windows Media Player 6.0 is installed, users should select "Help/About Windows Media Player" from within Windows Media Player and verify the version number is 5.01.52.0701 or greater.
Zero Administration Kit for Windows NT 4.0	Not Applicable	Compliant	See Note 5

**Conclusion:**

If **all** of the Windows NT Workstation 4.0 features that remain on the system after performing Step 1 and Step 2 are listed as "Compliant" in the table, Steps 1 and 2 were conducted correctly and the copy of Windows NT Workstation 4.0 on the Target System should have no known Year 2000 issues. If a feature with a "Not Compliant" rating remains on the Target System, the most likely cause is a failure to perform both Step 1 and Step 2 to completion. In this case, please review/retry those steps and associated actions.

**Notes:**

1. To determine which versions of FrontPage Server Extensions are actively in use on a system, run the FrontPage Server Administrator (Fpsrwin.exe). Click on each of the Web servers or virtual servers (listed in the box in the upper left area) that have been configured with the FrontPage Server Extensions. The version number of the FrontPage Server Extension is displayed to the right of the list. Version numbers where the first digit is "3" or greater resolve known Year 2000 issues (e.g. 3.0.2.1706). If the first digit of the version number is "1" or "2", users should install an updated version of the FrontPage Server Extensions. Refer to <http://www.microsoft.com/frontpage> for more details.
2. This *Not Compliant* version of this feature should only be present if the procedures outlined in Step 1 have not been performed correctly.
3. This *Not Compliant* version of this feature should only be present if the procedures outlined in Step 2 have not been performed correctly.
4. There is no Content Analyzer feature in Site Server Express 3.0. A replacement version that is Year 2000-compliant will be made available.
5. The *Compliant* ratings for Zero Administration Kits (ZAK kit) are based on being used with *Compliant* versions of the software configured for installation by the ZAK kit.
6. To verify the version number of a dynamic link library (DLL) file, users should:
  - Start Windows NT Explorer from the Start/Programs menu
  - Locate the DLL file to be verified
  - Select the file by pointing the mouse cursor at the file clicking the left mouse button once
  - Click the right mouse button once to display a menu

- Select "Properties" from the menu by pointing the mouse cursor at the option and clicking the left mouse button once
  - Select the "Version" tab by pointing the mouse cursor at the tab and clicking the left mouse button once
  - Visually Locate the version number in the field labeled "File Version."
7. Y2KSETUP.EXE has been removed from the recommended remediation path.
- Y2KSETUP.EXE was used to update Windows NT components to the following versions:
    - Internet Explorer 4.01 SP1
    - Microsoft Data Access Components 2.0 SP1
    - Site Server Express 3.0
  - Customers who already applied Y2KSETUP.EXE should evaluate their systems based on having the versions above. Additional remediation is required for IE 4.01 SP1. See Table 3 for details.
  - Microsoft as chosen to remove Y2KSETUP.EXE from the recommended remediation path for the following reasons:
    - Feedback from customers indicated that more flexibility was desired regarding how and when each component was upgraded
    - Additional remediation was required for IE4.01 SP1 in order to achieve the compliance. This was confusing for customers.
  - Note: Users that have both Microsoft Message Queue Service Version 1.0 and Site Server Express Version 2.0 installed on their Windows NT 4.0 machines should review the Microsoft Knowledge Base article [Q197533](#) before running Y2KSETUP.EXE:

#### Appendix:

For convenience, the Table 4 (below) lists features and products that Microsoft has made available on the Windows NT Workstation web site that Microsoft does not consider to be part of the Window NT Workstation 4.0 product for Year 2000 compliance purposes.

**Table 4**

Feature/Product Name	Notes
ADSI Implemented in Java	Available only in Beta test versions
Client 32 support for NetWare	This is a Novell product; consult Novell for compliance information
Dial-Up Networking Access Service Performance and Security Upgrade	Applies only to Windows 95.
I2O (Intelligent I/O Architecture) Drivers for Windows NT	Available only in Beta test versions
Microsoft Windows NT Services for UNIX	Available only in Beta test versions
Routing and Remote Access Service Performance and Security Upgrade	This is a collection of updates that have no impact on Year 2000 compliance ratings
Windows NT Server Management Tools for Windows 95	Runs only on Windows NT Workstation 4.0 and Windows.

#### Legend of Symbols:

\* Indicates the product is compliant, with recommended customer action. This indicates a

prerequisite action is recommended which may include loading a software update or reading a document.

- # Indicates the product is compliant, with acceptable deviations from Microsoft's standard of compliance. An acceptable deviation does not affect the core functionality (ex: data integrity) or stability (ex: reliability) of the product.
- + Indicates the product is compliant, with pending software updates. Future maintenance actions will be recommended shortly.

**Note:** Compliance ratings given for each product assume that all recommended actions have been taken.

If after reviewing this information you have additional questions related to this product

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## Windows NT Workstation 4.0<sup>®</sup> SP5 (English) - Win NT

<b>Product Summary</b>	
Product: Windows NT Workstation Version: 4.0 SP5	Category: Compliant* Operating System: Win NT
Language: English	Release Date: N/A
Operational Range:	01 Jan 1996 - 31 Dec 2036
Prerequisites:	See below
Product Dependencies:	None
Clock Dependencies:	System clock
Last Updated:	26 Jul 1999

### Product Details

[This information applies to **Windows NT Workstation 4.0 SP5**.]

#### Updated Information

A new issue has been discovered in versions of Outlook Express installed by Internet Explorer 4. Users of Outlook express should consult the [Internet Explorer Product Guide](#) for details.

#### Introduction

Service Pack 5 (SP5) provides the latest updates to Microsoft Windows NT Workstation 4.0 and Windows NT Server 4.0 (including Enterprise Edition). SP5 contains known Year 2000 updates for Windows NT 4.0. These Year 2000 updates are also available as separate Web downloads that customers may apply to a Service Pack 4 system. Providing this option gives organizations the flexibility to choose which path is easier for them to address Year 2000 issues. SP5 is not a required upgrade for year 2000 issues; Microsoft recommends that each customer consult the SP5 documentation and then determine whether to deploy it.

The current Windows NT 4 Service Pack 5 combined with the following actions addresses known Year 2000 issues. The compliance rating for Windows NT Workstation 4.0 above is dependent upon completing the steps below.

Click for more information or to download Service Pack 5.

Windows NT4 has had a number of service packs since its release. To reach a *Compliant* state with Windows NT 4, Microsoft recommends customers apply Service Pack 5 plus additional year 2000 software updates. Additionally, Microsoft intends to maintain the compliance of SP4, SP5, and any subsequent service packs, through January 1, 2001.

#### Year 2000 Remediation Process with SP5

When users load the Windows NT Workstation 4.0 operating system on a computer they are asked to select from many installation options. In addition, Microsoft has made additional Windows NT Workstation 4.0 features available to licensed users via Service Packs, the Windows NT Option Pack and the Windows NT Web site. Because users may have selected a variety of options and installed additional features on a given system, all options and features must be considered when assessing the system's Year 2000 readiness status.

Microsoft has determined that Windows NT Workstation 4.0 (including some installation options) and some versions of additional Windows NT Workstation 4.0 features have known Year 2000 issues, requiring updates. In order to update these known Year 2000 issues, users must first determine the set of options and features that they have installed on a given system (the "*Target System*") and follow the three-step procedure described below. In some cases the Year 2000 issue can be addressed by users applying updates. In other cases, users are instructed to update a feature to a newer version of the feature to address known issues. The steps identified below take a comprehensive approach to correcting known issues.

- Step 1 prepares the target system for SP5 by addressing any updates that are needed before SP5 is applied.
- Step 2 installs SP5 and any post-SP5 updates if available.
- Step 3 then audits the target system. To confirm all known issues have been corrected and steps 1 and 2 have been done correctly, the results of the audit should indicate

that only those versions having a "compliant" rating (as identified on the tables below) remain on the target system after Steps 1 and 2 have been completed.

### **Step 1**

SP5 itself will address most known Year 2000 issues. However, users must update or upgrade certain features to newer versions, in addition to applying SP5.

Table 1A (below) lists the Windows NT Workstation 4.0 features that must be updated or upgraded in addition to applying SP5, along with specific update/upgrade instructions.

Table 1B (below) lists the Windows NT Workstation 4.0 Optional features that must be updated or upgraded only if previous versions exist on the machine.

**Table 1A: System Components.**

Feature Name	Version	Action Required Prior to Step 2
Microsoft Internet Explorer (IE)	Multiple Versions	Upgrade to IE4.01 SP2 or newer including any applicable Year 2000 software Updates. For information on additional Year 2000 Updates for IE, refer to the Internet Explorer compliance documents <a href="#">HERE</a> . Go <a href="#">Here</a> for IE Downloads. (Users who prefer to remain on IE 4.01 SP1 should refer to the IE Year 2000 Compliance document available <a href="#">HERE</a> for appropriate actions. Additional software updates are required in addition to IE SP1.) Users who wish to install IE 4.01 SP2 or IE 5 Technology without adding IE icons and without making IE the default browser should consult KB article Q224088.

**Table 1B: Optional Components.**

Feature Name	Version	Action Required Prior to Step 2
Microsoft Data Access Components (MDAC)	Multiple Versions	Install MDAC 2.1 SP1 or newer including any applicable Year 2000 software Updates. For information on additional Year 2000 Updates for MDAC, refer <a href="#">HERE</a> . Go <a href="#">Here</a> for MDAC Downloads (Users who prefer to remain on MDAC 2.0 SP1 should refer to the MDAC Year 2000 Compliance document available <a href="#">HERE</a> for appropriate actions.) A year 2000 update for the Jet3.5 engine has recently been released. (April 1999) Consult the MDAC product guide for details.
Microsoft FrontPage 97	"97"	Install <a href="#">FrontPage 97 Year 2000 Updates</a>
Microsoft FrontPage 97 Server Extensions	"97"	Install <a href="#">FrontPage 98 Server Extensions</a> from the Server Extensions Download Section.

Microsoft Internet Locator Service	1.0	Install <u>Microsoft Internet Locator Service Version 2.0</u>
Site Server Express	2.0	Uninstall Site Server Express 2.0 and install Site Server Express 3.0. Refer <u>HERE</u> .

**Step 2**

Apply SP5 to the Target System. Windows NT 4 SP5 can be obtained HERE. The installation of SP5 applies updates to the base Windows NT Workstation 4.0 product including the installation options.

**Step 3:**Overview:

The final step of the process is to audit the target system to verify that Step 1 and Step 2 have been performed correctly.

- Create a list of the Windows NT Workstation 4.0 installation options and additional features installed on the target system
- Review the compliance status of the installation options and features using Tables 2 & 3.
- Confirm that only installation options and features having a "compliant" rating (as identified on the tables below) remain on the target system after Steps 1 and 2 have been completed.

Detail:

When users load the Windows NT Workstation 4.0 operating system on a computer they are asked to select from many installation options. These options are listed in Table 3 in the appendix of this document. Following successful completion of steps 1 and 2 above, the options are rated at *Compliant*.

In addition to the selectable options offered during installation of the Windows NT Workstation 4.0 operating system, there are additional features of the Windows NT Workstation 4.0 product that may be installed on the Target System. These features have been made available by Microsoft via Service Packs, the Windows NT Option Pack and the Windows NT Workstation Web site.

Table 2 (below) lists the additional features (and their versions) that Microsoft has made available to licensed users of the Windows NT Workstation 4.0 product since its original release. Use this table to verify the compliance of each Windows NT Workstation 4.0 feature installed on the Target System.

**Table 2**

Feature Name	Version	Feature Compliance Rating	Notes
Imaging for Windows	Not Applicable	Compliant	Applies to all Versions that run on Windows NT Workstation 4.0
Internet Connection Services for Microsoft Remote Access Service	1.0	Compliant	
Microsoft Data Access Components (MDAC)	Multiple Versions	See Notes for required action	Some versions of MDAC are not compliant. To make MDAC compliant, please review the MDAC Year 2000 Compliance document (click <u>HERE</u> ) for latest information on year

			2000 issues and updates for MDAC.
Microsoft Euro Currency Support for Windows NT 4.0	Not Applicable	Compliant	
Microsoft Front Page	1.0	Not Compliant	See Note 2
Microsoft Front Page	1.1	Not Compliant	See Note 2
Microsoft FrontPage 97	"97"	Not Compliant	See Note 2
Microsoft FrontPage 97 Server Extensions	"97"	Not Compliant	See Note 2
Microsoft FrontPage 97	"97" with Updates	Compliant	To determine that Microsoft Front Page 97 updates are installed, verify the version number of the file named: "(system directory)\system32\fp20tl.dll" is at least 02.00.3002.23. See note 6 for instructions on verifying version numbers of .DLL files.
Microsoft FrontPage 98 Server Extensions	"98"	Compliant	
Microsoft Internet Explorer	Multiple Versions	See Notes for required action	Consult the Year 2000 Product Guide for details
Microsoft Internet Information Server	2.0	Compliant	
Microsoft Internet Information Server	3.0	Compliant	
Microsoft Internet Information Server	4.0	Compliant	
Microsoft Internet Locator Service	1.0	Not Compliant	See Note 2
Microsoft Internet Locator Service	2.0	Compliant	
Microsoft Management Console	1.0	Compliant	
Microsoft Management Console	1.1	Compliant	
Personal Web Services	4.0	Compliant	
Microsoft Virtual Machine	(Many Versions)	See Notes for Required Action	Some versions of the Microsoft Virtual Machine, including the versions that shipped with SP4 and with some versions of Internet Explorer, have Year 2000 date-related issues. Please refer to the

			Microsoft VM year 2000 Product Guide at <a href="#">Microsoft Virtual Machine</a> for details and recommendations to address known issues.
Routing and Remote Access Services	4.0	Compliant	
Site Server Express	2.0	Not Compliant	See Note 2
Site Server Express	3.0	Compliant	See Note 5
Windows Management Interface (WMI)	1.0	Compliant	
Windows Media Player	6.0	Compliant	To verify that Windows Media Player 6.0 is installed, users should select "Help/About Windows Media Player" from within Windows Media Player and verify that the version number is 5.01.52.0701 or greater.
Zero Administration Kit for Windows NT 4.0	Not Applicable	Compliant	See Note 6

**Conclusion:**

If **all** of the Windows NT Workstation 4.0 features that remain on the system after performing Step 1 and Step 2 are listed as "Compliant" in the table below, Steps 1 and 2 were conducted correctly and the copy of Windows NT Workstation 4.0 on the Target System should have no known Year 2000 issues. If a feature with a "Not Compliant" rating remains on the Target System, the most likely cause is a failure to perform both Step 1 and Step 2 to completion. In this case, please review/retry those steps and associated actions.

**Notes:**

1. To determine which versions of FrontPage Server Extensions are actively in use on a system, run the FrontPage Server Administrator (Fpsrvwin.exe). Click on each of the Web servers or virtual servers (listed in the box in the upper left area) that have been configured with the FrontPage Server Extensions. The version number of the FrontPage Server Extension is displayed to the right of the list. Version numbers where the first digit is "3" or greater resolve known Year 2000 issues (e.g. 3.0.2.1706). If the first digit of the version number is "1" or "2", users should install an updated version of the FrontPage Server Extensions. Refer to <http://www.microsoft.com/frontpage> for more details.
2. This *Not Compliant* version of this feature should only be present if the procedures outlined in Step 1 have not been performed correctly.
3. This *Not Tested* or *Not Compliant* version of this feature should only be present if the procedures outlined in Step 2 have not been performed correctly.
4. There is no Content Analyzer feature in Site Server Express 3.0. An updated Content Analyzer is available from the Windows NT Workstation Service Pack 4 Download page. <http://www.microsoft.com/support/winnt/default.htm>. Click on Begin the Download Process, Select Encryption Level, and Accept the License agreement. The following page allows the user to download the updated Content Analyzer.
5. The *Compliant* ratings for Zero Administration Kits (ZAK kit) are based on being used with *Compliant* versions of the software configured for installation by the ZAK kit.

6. To verify the version number of a dynamic link library (DLL) file, users should:
  - Start Windows NT Explorer from the Start/Programs menu
  - Locate the DLL file to be verified
  - Select the file by pointing the mouse cursor at the file clicking the left mouse button once
  - Click the right mouse button once to display a menu
  - Select "Properties" from the menu by pointing the mouse cursor at the option and clicking the left mouse button once
  - Select the "Version" tab by pointing the mouse cursor at the tab and clicking the left mouse button once
  - Visually Locate the version number in the field labeled "File Version"
7. Y2KSETUP.EXE has been removed from the recommended remediation path.
  - Y2KSETUP.EXE was used to update Windows NT components to the following versions:
    - Internet Explorer 4.01 SP1
    - Microsoft Data Access Components 2.0 SP1
    - Site Server Express 3.0
  - Customers who already applied Y2KSETUP.EXE should evaluate their systems based on having the versions above. Additional remediation is required for IE 4.01 SP1. See Table 2 for details.
  - Microsoft as chosen to remove Y2KSETUP.EXE from the recommended remediation path for the following reasons:
    - Feedback from customers indicated that more flexibility was desired regarding how and when each component was upgraded
    - Additional remediation was required for IE4.01 SP1 in order to achieve the compliance. This was confusing for customers.
  - Note: Users that have both Microsoft Message Queue Service Version 1.0 and Site Server Express Version 2.0 installed on their Windows NT Workstation 4.0 machines should review the Microsoft Knowledge Base article [Q197533](#) before running Y2KSETUP.EXE:

**Appendix:**

When users load the Windows NT Workstation 4.0 operating system on a computer they are asked to select from many installation options. These options are listed in Table 3 below. The known Year 2000 issues with each of the options listed in Table 3 below should be updated after applying SP5.

***Table 3***

Option/Server Name	Compliance Rating
DHCP Relay Agent	Compliant
DLC Protocol	Compliant
Gateway Services for NetWare	Compliant
Microsoft DHCP Server	Compliant
Microsoft DNS Server	Compliant
Microsoft TCP/IP Printing	Compliant
NetBEUI Protocol	Compliant
NetBIOS Interface	Compliant

Network Monitor Agent	Compliant
Network Monitor Tools and Agent	Compliant
NWLink IPX/SPX-Compatible Transport	Compliant
Point To Point Tunneling Protocol	Compliant
Remote Access Service	Compliant
Remote Boot Service	Compliant
RIP for Internet Protocol	Compliant
RIP for NWLink IPX/SPX-Compatible Transport	Compliant
RPC Configuration	Compliant
RPC Configuration	Compliant
RPC Support for Banyan	Compliant
SAP Agent	Compliant
Server	Compliant
Services for Macintosh	Compliant
Simple TCP/IP Services	Compliant
SNMP Service	Compliant
Streams Environment	Compliant
TCP/IP Protocol	Compliant
Windows Internet Name Service	Compliant
Windows Messenger Service	Compliant
Workstation	Compliant

For convenience, the Table 4 (below) lists features and products that Microsoft has made available on the Windows NT Workstation web site that Microsoft does not consider to be part of the Window NT Workstation 4.0 product for Year 2000 compliance purposes.

**Table 4**

Feature/Product Name	Notes
ADSI Implemented in Java	Available only in Beta test versions
Client 32 support for NetWare	This is a Novell product; consult Novell for compliance information
Dial-Up Networking Access Service Performance and Security Upgrade	Applies only to Windows 95 systems should not be present on a Windows NT Workstation 4.0 system

I2O (Intelligent I/O Architecture) Drivers for Windows NT	Available only in Beta test versions
Microsoft Windows NT Services for UNIX	Available only in Beta test versions
Routing and Remote Access Service Performance and Security Upgrade	This is a collection of updates that have no impact on Year 2000 compliance ratings

### Legend of Symbols:

- \* Indicates the product is compliant, with recommended customer action. This indicates a prerequisite action is recommended which may include loading a software update or reading a document.
- # Indicates the product is compliant, with acceptable deviations from Microsoft's standard of compliance. An acceptable deviation does not affect the core functionality (ex: data integrity) or stability (ex: reliability) of the product.
- + Indicates the product is compliant, with pending software updates. Future maintenance actions will be recommended shortly.

**Note:** Compliance ratings given for each product assume that all recommended actions have been taken.

If after reviewing this information you have additional questions related to this product,.

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## Appendix F Intellution<sup>®</sup> Inc.'s Y2K Compliance Statement for Fix WIN95/98/NT<sup>®</sup>

Intellution, Incorporated is a wholly-owned subsidiary of the Emerson Electric Company. The following text was downloaded from their Y2K web site at URL:  
<http://www.intellution.com/solutions/year2000/Y2Ktable.asp>.

Product Name	Version	Year 2000 Solution	Schedule
<b>FIX Dynamics(NT)</b>	2.1	Compliant	Shipping!
	2.0	Compliant	
	PDE	Compliant	
<b>FIX WIN95/98/NT and PlantTV</b>	7.0	Compliant	Shipping!
	6.15	Compliant	
	6.12	<u>Upgrade To FIX Dynamics 2.1 or FIX 7.0 (1)</u>	
	6.1	<u>Upgrade To FIX Dynamics 2.1 or FIX 7.0(1)</u>	
	6.00	<u>Upgrade To FIX Dynamics 2.1 or FIX 7.0(1)</u>	
<b>FIX Stats for Win95/98/NT</b>	4.1	Compliant	Shipping!
	4.0	Compliant	
<b>FIX Windows and PlantTV</b>	5.65	Compliant	Shipping!
	5.6	<u>Upgrade To FIX Dynamics 2.1 or FIX 7.0 or FIX 5.65 (1)</u>	
	5.5/30	<u>Upgrade To FIX Dynamics 2.1 or FIX 7.0 or FIX 5.65 (1)</u>	
	5.5/10	<u>Upgrade To FIX Dynamics 2.1 or FIX 7.0 or FIX 5.65 (1) (2)</u>	
	5.0x	<u>Upgrade To FIX Dynamics 2.1 or FIX 7.0 or FIX 5.65 (1) (2)</u>	
	4.x	<u>Upgrade To FIX Dynamics 2.1 or FIX 7.0 or FIX 5.65 (1) (2)</u>	
	3.x	<u>Upgrade To FIX Dynamics 2.1 or FIX 7.0 or FIX 5.65 (1) (2)</u>	

<b>FIX Stats for Windows</b>	3.1.6	Upgrade to FIX 7.0 for NT/95/98 and FIX Stats 4.1	
<b>VisualBatch(NT)</b>	4.0	Compliant	Shipping!
	3.0	Compliant	
<b>FIX Webserver</b>	2.0 (FIX Dynamics)	Compliant	Shipping!
	1.5 (FIX)	Compliant	Shipping!
	1.0	Compliant	
<b>FIX Broadcast Network</b>	1.0	Compliant	Shipping!
<b>Paradym-31</b>	4.1	Compliant	Shipping!
	4.0	Upgrade to 4.1	
	2.x	Upgrade to 4.1	
<b>FIX NT</b>	4.x	Upgrade to 7.0 (NT)	
<b>FIX for DOS</b>	3.03	Y2KM from Intellution required (1)	Shipping!
	3.02	Upgrade To FIX Dynamics 2.1, FIX 7.0 or FIX for DOS 3.03 Y2KM (1)	
	3.01	Upgrade To FIX Dynamics 2.1, FIX 7.0 or FIX for DOS 3.03 Y2KM (1)	
	3.00	Upgrade To FIX Dynamics 2.1, FIX 7.0 or FIX for DOS 3.03 Y2KM (1)	
	2.x	Upgrade To FIX Dynamics 2.1, FIX 7.0 or FIX for DOS 3.03 Y2KM (1)	
<b>THE FIX, FIX ACE, and SpeciFIX</b>	ALL	Upgrade to FIX Dynamics 2.1 or FIX 7.0	
<b>FIX OS/2</b>	ALL	Upgrade to FIX Dynamics 2.1 or FIX 7.0	
<b>FIX BOS</b>	6.15	Compliant	Shipping!
	6.01 (NT)	Upgrade to FIX BOS 6.15	

5.51/4.52 (NT/WIN)	Upgrade to FIX BOS 6.15	
3.x (OS/2)	Upgrade to FIX BOS 6.15	

Note: - All newly developed Intellution software products will be Year 2000 Compliant.

**Y2KM:Year 2000 Module**

(1) Intellution encourages customers to upgrade to the latest release of FIX software, Intellution FIX Dynamics 2.1 or FIX 7.0 (NT/98). This upgrade will aid Intellution customers in maintaining software that is best supported by Intellution and Microsoft. Therefore, even with Year 2000 compliance, it is in the best interests of our FIX for DOS customers to upgrade their FIX for DOS products to the Microsoft NT environment.

(2) If this node is communicating with a FIX for DOS node, you must upgrade to FIX Dynamics 2.1 or FIX 7.0.

For upgrade information please see [here](#)

**FIX 6.15**

## Year 2000 Readiness Disclosure

FIX 6.15 is Intellution's Year 2000 (y2k) Compliant Release for Windows NT and Windows 95 operating systems. All areas of the package involving date were tested for y2k compliance using Intellution's certified y2k compliant process. This release incorporated 128 SIMs (Software Improvement Modules), the latest I/O drivers and several new or enhanced features.

To assure compliance to the y2k standards, Intellution's Quality Assurance plan centered around testing the product using two digit and four digit date format in five functional scenarios:

- Crossing over into the year 2000
- Retrieving data historically across the year 2000 boundary
- Leap Year, 2/29/2000
- Date inferencing to 12/31/2069
- Day of the week

The new features for FIX 6.15 include:

- YEAR 2000 Compliance
- View - Background scripting
- View - Tile & Cascading of pictures
- Multiple Picture NTF Search & Replace
- Remote Historical
- Historical Trend Assign CSV format support
- AutoFailover
- Security Protection for Windows Keyboard keys
- New Sentinel key drivers
- Security Configuration files saved as Read Only
- Wizdom Fastlink

Intellution recommends customers to upgrade to the latest version of FIX, FIX 6.15.

## Intellution's Frequently Asked Questions Year 2000 Compliant Software Products

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**Does Intellution have a Year 2000 program to address the new millennium issues?**

Yes, Intellution has designed a *Year 2000 Compliance Plan* to address Year 2000 issues in its' products. This plan identifies Intellution's use of a Project Methodology to identify and resolve year 2000 issues. The *Compliance Plan* defines the scope and objectives of the project, Intellution's policy, compliance definition and the five phased approach to address Year 2000 issues.

**Is there a project team working on compliance?**

Yes, Intellution project team is comprised of individuals to oversee the year 2000 effort across all products as well as within individual product lines.

**Is there a corporate Year 2000 policy?**

Yes, Intellution's Year 2000 Policy Statement is included in the *Compliance Document*.

**Will you warrant product against failure?**

Intellution warrants all of its Products per its Standard Limited Warranty as set forth in the License Agreement supplied with each Intellution Product.

**Will you provide written confirmation of readiness?**

Yes, the *Intellution Year 2000 Compliance Statement*, is a written confirmation of readiness. A Schedule of Release of Intellution's products is also available on Intellution's web site, <http://www.intellution.com>.

**Which products and versions are Year 2000 Compliant?**

The *Year 2000 Compliance Schedule*, lists all the products and versions that are or will be year 2000 compliant. Intellution's FIX Dynamics, FIX 6.15, FIX 5.65, FIX VisualBatch, FIX Web Server, FIX Broadcast Network, FIX OPC Server Toolkit 7.x , FIX I/O Driver Toolkit 6.X, FIX Integration Toolkit 6.15, FIX Easy Database Access Toolkit 5.65, and FIX Database Dynamo Toolkit 6.15 are Year 2000 compliant per Intellution's Year 2000 process plan. This plan has been certified by ITAA, (Information Technology Association of America, [www.ita.com](http://www.ita.com)).

**Which products and versions are not Year 2000 compliant?**

The *Year 2000 Compliance Schedule*, lists all the products that are presently Year 2000 compliant and dates of future Year 2000 products.

**Does your product recognize Year 2000 as a leap year? (02/29/00 or 02/29/2000)**

Yes, any Intellution software product released as Year 2000 Compliant recognizes Year 2000 as a leap year.

**How does the date get transferred to other components?**

Both 2-digit & 4-digit format.

**How does YY year data get interpreted for century?**

A sliding window technique. (If YY is less than 70 then century = 20YY, if YY is greater than or equal to 70 then century = 1900)

**How will dates be represented in the Year 2000 Compliant version?**

Both two-digit and four digit year format for existing products that support both. Newly developed products will only offer four-digit year format.

**Has the product been tested for power down and power up before and after the new century?**

Yes, it has been tested.

**Will the Year 2000 compliant version be provided at no extra charge as part of your standard maintenance program, (ESS)?**

Upgrades and warranty follow the standard upgrade Intellution policy, through ESS (Extended Service and Support) and warranty policies. Please contact your Intellution Representative, Distributor or system integrator for more information.

**How will upgrades be announced?**

Through Intellution's Web Page (<http://www.intellution.com>), Intellution Representatives, and System Integrators.

**Please provide information on the means and methods by which you have tested, or intend to test your product for Year 2000 compliance. Please provide a summary of the results or state when these will be available.**

The method used to determine year 2000 compliance is a comprehensive test plan focused on year 2000 date handling. This test plan along with the process used to produce the compliant product was certified by an outside agency (ITAA, Information Technology Association of America) specializing in year 2000.

**If your current version is Year 2000 compliant, what changes were introduced specifically to deal with Year 2000? Please explicitly state how the interaction or interfaces have changed with your enhanced Year 2000 compliant product.**

Fix 6.15 and 5.65, Intellution's current versions of the Fix, are year 2000 compliant. Changes to the previous versions dealt specifically with two-digit year format issues. A 'sliding window' technique was implemented to deal with this. Those changes were incorporated in 6.15 released in June of 1997 and 5.65 release in January of 1998.

**How many programs and date fields needed or will need to be changed?**

Approximately 20 code areas were affected by Year 2000.

**Fix 6.15 is Year 2000 compliant! What are the new features in FIX 6.15?**

- ✓ Year 2000 Compliance
- ✓ View-Background Scripting
- ✓ View-Tile & Cascading of Pictures
- ✓ Multiple Picture NTF Search & Replace
- ✓ Remote Historical Trend Assign CSV format support
- ✓ AutoFailover
- ✓ Security Protection for Window Keyboard keys
- ✓ New Sentinel Key drivers
- ✓ Security Configuration files, saved as Read Only
- ✓ Wizdom Fastlink Interface

**Are versions of Plant TV compliant?**

Plant TV version 6.15 and 5.65 are Y2K compliant, as well as all of the options in those versions.

**What testing procedures are in place?**

Intellution performs a series of analysis methods to identify and inventory affected areas of the product. During the Quality Assurance phase of the project a test suite is developed and executed against the corrected product where applicable.

**Will the installation of the Year 2000 compliant release require any application upgrades or any modifications of existing data sets?**

For current product applications there is no re-engineering required for items such as pictures, databases, I/O driver tables etc. Third party applications may need to be upgraded to be year 2000 compliant. Intellution can not speculate on the ramifications of these upgrades. However, most software manufacturers strive to provide upward compatibility. Upgrading from legacy applications to current technology may involve some re-engineering. i.e. Bringing a Fix DOS application up to Fix 6.15 for 95/NT will require picture development.

**Do drivers need to be replaced?**

Drivers are generally not affected by year 2000. The majority of Intellution drivers do not use any date functionality.

**What happens to older products when the Year 2000 hits. Do they crash or will they run on the year 1900.**

In general, the non-Year 2000 compliant software has deficiencies in areas involving two digit date formatting and Year 2000 Leap Day. The Fix system will continue to run in most cases. However, the integrity of the application is at risk. Any logic decisions based on date inside our logic will be at risk as well as any logic that the application has been configured to perform. Areas such as Historical Collect will fail to create the correct file name for its data resulting in Historical Displays inability to retrieve data. Similar scenarios can be found with the other areas of the package affected by date. Those areas include:

**Alarms** – The formatting of the date in the alarm typers will be an issue. The ability to delete alarm files older than X number of days will cease to function.

**View** – Date is used in view as a system link for display purposes and setting the system clock.

**Historical Trending, Displaying and Reporting** – File naming problems will arise in the trending part of the Historical package. This will result in Historical Displays inability to retrieve data from those files. The formatting of the date legends in the Display itself will be incorrect. Reports use date stamps that can be of issue.

**Database Builder** – Database Builder uses a date stamp when reporting a database to a text file.

**SAC** - Functionality of database blocks such as the PG, TM, SQT blocks are affected by date issues.

**Recipe** – upload, download and audit trail are affected by date issues.

**Message Handler Option** – Is affected by date issues.

**Security** – Date issues affect security such as login timeout.

**SQL** – The SQL interface has the capability of using date and time as part of its functionality.

**If dates extending past the year 2000 must be processed now, and a current release installed at our organization does not handle dates outside the 1900 – 1999 range, please inform us of the necessary corrective action required and how you may be able to support the effort.**

If the application is configured in a way that it is able to perform operations using year 2000 dates now, then Intellution's Year 2000 compliant solution would need to be invoked. If a compliant solution was not available, Intellution would support the customer in providing a corrective solution or workaround when ever possible.

**What tests has Intellution performed for Y2K compliance?**

A full suite of product tests were performed in all areas of the package using date and time.

**Can another non-compliant system crash a system?**

The FIX application has not had incidence with non-compliant interactive applications.

Additionally, the NT operating system provides a level of isolation around applications such that a non-compliant application would not crash the operating system and thus the FIX application.

**Under what conditions will the product start to progressively fail if not upgraded to a Year 2000 compliant version. When could an application start to fail due to Year 2000 issues?**

In a run time environment the Historical Collection program will attempt to create a file for 010100.hxx approximately five minutes prior to midnight on 12/31/99. This will result in an incorrect file name that will result in improper data collection.

In a development environment you will not be able to enter 00 as a year. i.e. In a program block

you would not be able to define a "If Date = 01-01-00 goto 20". This would result in an invalid year message.

**Has data been tested to be continuous across the change of century?**

Yes, in both directions. Testing was performed as the system crossed into Year 2000 and retrieving data back across the Year 2000 boundary. Other areas of the package were tested for operation with information from both centuries.

**Have all components (trending, data historian, statistical process control, data storage and retrieval) been tested for all dates including the transition across the change of century?**

Yes, with the exception of SPC. Analysis did not indicate any date issues with this feature.

**Do SCADA nodes need to be changed and do recipe builders or message handlers need to be changed?**

All options need to be replaced for Year 2000 compliance.

**Does BOS SQL server need to be upgraded?**

BOS is addressed in the compliance schedule. We recommend that you contact the SQL vendor to assure its' components year 2000 compliance.

# Appendix G Microsoft Corporation's<sup>®</sup> Y2K Compliance Statement for Visual Basic 4.0<sup>®</sup> (32-bit for Windows<sup>®</sup> Operating Systems)

The following text was downloaded from their Y2K web site at URL:  
<http://www.microsoft.com/technet/year2k/product/product.asp>.

## Visual Basic 4.0 32-bit Win

<b>Development Tool:</b> Visual Basic	<b>Version:</b> 4.0 32-bit Win	<b>Design Time:</b> Compliant#	
		<b>Can applications be built with this tool that adhere to the Microsoft Year 2000 Compliance Statement?</b> Yes	
<b>Languages:</b> Chinese Traditional English, French, German, Italian, Japanese, Spanish	<b>Operational Range for Data:</b> System Dependent	<b>Release Date:</b> 1995	
<b>Prerequisites:</b> See Below			
<b>Product Dependencies:</b> MS-DOS, Windows 3.x, Windows NT 4 Service Pack 4 + Year 2000 Software Updates, Windows NT 3.51 Service Pack 5 + Year 2000 Software Updates, Windows 95 OSR2, Windows 98 + Year 2000 Software Updates			
<b>Clock Dependencies:</b> System Clock, Visual Basic runtime, (OLE) Automation Libraries			
<b>Category:</b> Development Tools			

### Developing Year 2000 Compliant Software

#### **How the product runtime handles dates:**

Visual Basic 4.0 (32-bit) converts 2-digit years to 4-digit years based on the default in the Automation libraries except when using the DateSerial function which, converts the 2-digit years to the century of the current system date. The 32-bit Automation libraries (OleAut32.dll version 2.10) that shipped when Visual Basic 4.0 was released converted 2-digit years to the century of the current system date. Later 32-bit Automation libraries (OleAut32.dll version 2.20 and later) convert 2-digit years to the 2000s if the 2-digit year is between 00 and 29. If the 2-digit year is between 30 and 99, the date is converted to the 1900's (1930-1999).

#### **Two-digit shortcut handling:**

During the Visual Basic 4.0 development cycle, a new rule emerged. A 2-digit year would be converted to the current century of the system date. Thus, Year(Date("1/1/00")) would evaluate to the current century. This new rule was implemented in the OLE Automation libraries used by Visual Basic 4.0 and Visual Basic for Applications. The Visual Basic 4.0 runtime library also implements the rule for the DateSerial function.

Microsoft changed the default in the OLE Automation (now simply Automation) libraries as of version 2.20.4049 of OleAut32.dll. This change does not affect 16-bit applications that rely on the Automation libraries, only 32-bit applications. Now, a 2-digit year between 00 and 29 (such as 17) is interpreted as 2017 while a 2-digit year between 30 and 99 (such as 72) is interpreted as 1972. The new Automation libraries provide the functionality that Visual Basic requires for the DateSerial function. Thus, Visual Basic 5.0 and subsequent releases no longer implement rules for the DateSerial function in their runtime libraries.

The updated Automation library ships with Internet Explorer version 3.0 and later, Windows NT 3.51 Service Pack 5, Windows NT 4.0, Windows 95 OSR2, Office 97, Visual Basic 5.0 and other products.

For additional information, please refer to Knowledge Base article [Q162718](#)

### **Recommended practices to develop year 2000 compliant applications with this**

**Development Tool:**

Users can use their own set of rules instead of relying on the defaults native to Visual Basic. For example, users may enter only a 2-digit year and have 00 to 49 correspond to the years 2000 to 2049 and have 50 to 99 correspond to the years 1950 to 1999.

When accepting a date string from the user, test the format of the string to determine the number of digits entered for the year. According to the rules for this sample application, 1/11/45 is in the year 2045, and not in the year 1945. Within the code for the application, change the string to use the appropriate 4-digit year, and then convert that date string with the 4-digit year into a date variable.

Please refer to the white paper, "[Developing Y2K Compliant Applications with Visual Basic](#)" for more information.

**Common development errors dealing with year 2000 date issues:**

Please refer to the white paper, "[Developing Y2K Compliant Applications with Visual Basic](#)"

**Other design time issues to be aware of when using this tool:**

Please refer to the white paper, "[Developing Y2K Compliant Applications with Visual Basic](#)"

**Testing guidelines and recommendations:**

The following code evaluates the data entered into a textbox named txtDate when the user clicks cmdConvertDate. If the date contains a 2-digit year, the date is converted into a 4-digit year date according to the sample rule. The code then displays the initial date entered, the full year as converted by the code according to the sample rule, and the full year converted by the defaults native to Visual Basic.

Finally, the date displayed in txtDate is converted to a non-ambiguous date with the appropriate 4-digit year.

This code requires that dates are entered in the mm/dd/yy format, but it could easily be changed to handle a different date format:

```
Private Sub cmdConvertDate_Click()
Dim strYear As String
Dim intSlash As Integer
If IsDate(txtDate) or txtDate = "2/29/00" Then
'Find first date separator.
intSlash = InStr(txtDate, "/")
If intSlash > 0 Then
'Find second date separator.
intSlash = InStr(intSlash + 1, txtDate, "/")
If intSlash > 0 Then
'Extract the year from the date.
strYear = Mid(txtDate, intSlash + 1)
If Len(strYear) = 2 Then
If CInt(strYear) < 50 Then
' Less than 50: year = 20XX.
strYear = "20" & strYear
Else
' Greater than 50: year = 19XX.
strYear = "19" & strYear
End If
End If
MsgBox "Date Entered: " & txtDate
MsgBox "Year (Our Rule): " & strYear
MsgBox "Year (VB Default): " & Year(txtDate)
Else
MsgBox "Date not in expected format!"
End If
```

```

Else
MsgBox "Date not in expected format!"
End If
Else
MsgBox "Not a valid date!"
End If
' Clarify date in txtDate.
txtDate.Text = Left(txtDate.Text, intSlash) & strYear
End Sub

```

**Legend of Symbols:**

- \* The product is compliant. User action is recommended, which may include loading a software update or assessing shared technology.
- # The product is compliant with an acceptable deviation from Microsoft's standard of compliance. An acceptable deviation does not affect the core functionality, data integrity, stability or reliability of the product.
- + The product is compliant . Software updates are pending. Future maintenance actions will be recommended shortly.

**Note:** Compliance ratings given for each product assume that all recommended actions have been taken.

YEAR 2000 READINESS DISCLOSURE

ALL COMMUNICATIONS OR CONVEYANCES OF INFORMATION TO YOU CONCERNING MICROSOFT AND THE YEAR 2000, INCLUDING BUT NOT LIMITED TO THIS DOCUMENT OR ANY OTHER PAST, PRESENT OR FUTURE INFORMATION REGARDING YEAR 2000 TESTING, ASSESSMENTS, READINESS, TIME TABLES, OBJECTIVES, OR OTHER (COLLECTIVELY THE "MICROSOFT YEAR 2000 STATEMENT"), ARE PROVIDED AS A "YEAR 2000 READINESS DISCLOSURE" (AS DEFINED BY THE YEAR 2000 INFORMATION AND READINESS DISCLOSURE ACT) AND CAN BE FOUND AT MICROSOFT'S YEAR 2000 WEBSITE LOCATED AT <http://microsoft.com/year2000/> (the "Y2K WEBSITE"). EACH MICROSOFT YEAR 2000 STATEMENT IS PROVIDED PURSUANT TO THE TERMS HEREOF, THE TERMS OF THE Y2K WEBSITE, AND THE YEAR 2000 INFORMATION AND READINESS DISCLOSURE ACT FOR THE SOLE PURPOSE OF ASSISTING THE PLANNING FOR THE TRANSITION TO THE YEAR 2000. EACH MICROSOFT YEAR 2000 STATEMENT CONTAINS INFORMATION CURRENTLY AVAILABLE AND IS UPDATED REGULARLY AND SUBJECT TO CHANGE. MICROSOFT THEREFORE RECOMMENDS THAT YOU CHECK THE Y2K WEBSITE REGULARLY FOR ANY CHANGES TO ANY MICROSOFT YEAR 2000 STATEMENT. EACH MICROSOFT YEAR 2000 STATEMENT IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND. CONSEQUENTLY, MICROSOFT DISCLAIMS ALL WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. MOREOVER, MICROSOFT DOES NOT WARRANT OR MAKE ANY REPRESENTATIONS REGARDING THE USE OR THE RESULTS OF THE USE OF ANY MICROSOFT YEAR 2000 STATEMENT IN TERMS OF ITS CORRECTNESS, ACCURACY, RELIABILITY, OR OTHERWISE. NO ORAL OR WRITTEN INFORMATION OR ADVICE GIVEN BY MICROSOFT OR ITS AUTHORIZED REPRESENTATIVES SHALL CREATE A WARRANTY OR IN ANY WAY DECREASE THE SCOPE OF THIS WARRANTY DISCLAIMER. IN NO EVENT SHALL MICROSOFT OR ITS SUPPLIERS BE LIABLE FOR ANY DAMAGES WHATSOEVER REGARDING ANY MICROSOFT YEAR 2000 STATEMENT INCLUDING DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, LOSS OF BUSINESS PROFITS, PUNITIVE OR SPECIAL DAMAGES, EVEN IF MICROSOFT OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, SO THE FOREGOING LIMITATION MAY NOT APPLY TO YOU. THE INFORMATION CONTAINED IN EACH MICROSOFT YEAR 2000 STATEMENT IS FOUND AT THE Y2K WEBSITE AND IS INTENDED TO BE READ IN CONJUNCTION WITH OTHER INFORMATION LOCATED AT THE Y2K WEBSITE, INCLUDING BUT NOT LIMITED TO MICROSOFT'S YEAR 2000 COMPLIANCE STATEMENT, THE DESCRIPTION OF THE CATEGORIES OF COMPLIANCE INTO WHICH MICROSOFT HAS CLASSIFIED ITS PRODUCTS IN ITS YEAR 2000 PRODUCT GUIDE, AND THE MICROSOFT YEAR 2000 TEST CRITERIA.

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## Appendix H Microsoft Corporation's® Y2K Compliance Statement for Windows 98® Operating System and Service Pack 1

The following text was downloaded from their Y2K web site at URL:  
<http://www.microsoft.com/technet/year2k/product/product.asp>.

### Windows 98 4.10.1998 (English) - 32-Bit Win

Product Summary	
Product: Windows 98 Version: 4.10.1998	Category: Compliant* Operating System: 32-Bit Win
Language: English	Release Date: 25 Jun 1998
Operational Range:	01 Jan 1980 - 31 Dec 2035
Prerequisites:	Windows 98 Year 2000 Updates; Updated Microsoft Virtual Machine; Outlook Express 4.01 software update
Product Dependencies:	NONE
Clock Dependencies:	PC BIOS
Last Updated:	28 Jun 1999

#### Product Details

##### **Windows 98**

**Product Maintenance:** While Microsoft continues to recommend that customers install the most current Service Pack/Release for non-Year 2000 reasons, we understand that, for many reasons, this may not be possible. In order to aid our customers' Year 2000 efforts, Microsoft intends to maintain Windows 98 as compliant through January 1, 2001. Newer Service Packs are also to be maintained as compliant, and may include additional non-Year 2000 updates. This is intended to minimize the Year 2000 as a reason to upgrade.

#### INSTALLATION OF WINDOWS 98 YEAR 2000 UPDATES

##### **Windows 98 users:**

Please start the Windows Update service from the link on the Start menu. This will prompt you to install the appropriate year 2000 updates for your Windows 98 system.

##### **All other users:**

For information on Windows 98, please go to the [Windows 98 Web site](#).

To download individual year 2000 updates for Windows 98, go to the [Windows 98 Update for Corporate IT Managers](#).

If you need to update a computer without Internet connectivity, you can order the Year 2000 Resource Center CD by calling 1-888-MSFT-Y2K or from the following Microsoft Web site: [www.microsoft.com/year2000](http://www.microsoft.com/year2000).

#### RESOLVED PRODUCT ISSUES:

##### **Outlook Express Issue (Q234680/Q234681)**

If Outlook Express (OE) 4.01 (Service Pack 1 or Service Pack 2) receives an IMAP mail

message or a News message with a 2-digit year as the sent date, the date can be misinterpreted under certain conditions. If the 2-digit year is anything other than "99", OE will assume the century value is the same as the current century. If the current year is 2000, and a 2-digit date is received as "97", then the year will be interpreted as 2097. However, there is one special case when different logic is applied. If the 2-digit year "99" is received and the current year is a multiple of 100 (e.g. 2000), the year will be interpreted as the current year plus 98 (e.g. 2098).

A software update is available for this issue. There is a separate update if you are running Outlook Express 4.01 SP1 or Outlook Express 4.01 SP2. The software update is found [here](#).

### Issues resolved with Year 2000 Update #2 (released June 1999)

**OLE Automation:** The Microsoft Automation library contains routines for interpreting 2-digit years and provides a convenient way for applications to create unambiguous (serial) dates. In Windows 98 the current 2-digit year cutoff is 2029. This means that 2-digit years beginning with 30 will be interpreted as being in the 1900s, i.e. 1/1/30 is converted to 1/1/1930, irrespective of the user's century window settings in Control Panel\Regional Settings\Date tab.

**DOS Xcopy** For systems using the International date format "yy-mm-dd" 2-digit years are not handled correctly. When a system is configured to use the date format "yy-mm-dd" in Control Panel \ Regional Settings, xcopy will not accept 00 for the year 2000.

**MQRT.DLL (Q230050)** Microsoft Message Queue (MSMQ) is installed as part of Personal Web Server and works with two types of digital certificates – external and internal. Internal certificates is a concept supported by MSMQ to allow MSMQ applications to allocate certificates for the purpose of sending authenticated messages. The code creating the requests for internal certificates for MSMQ 1.0 requests to set the validity of the newly created certificates to 10 years. The problem materializes when MSMQ tries to create such a certificate on February 29, 2000 (or any leap year such as 2004, 2008, etc.). This fails because it computes the validity by adding 10 years to the current date, which yields 2/29/2010. This is an illegal date because 2010 is not a leap year.

### Previously Resolved Issues (Year 2000 update released December 1998)

Microsoft identified and updated the following issues found in Windows 98 with the existing Windows 98 Year 2000 update.

**MICROSOFT VIRTUAL MACHINE** Year 2000 issues have been reported in connection with Microsoft virtual machines based on the Sun Microsystems Java Development Kit (versions 1.1.1-1.1.5). Applications written in Java that make use of the java.txt.SimpleDateFormat class library may parse 4-digit dates incorrectly. **Note:** The Microsoft Virtual Machine Version 2405 (2424) that ships with Windows 98 Gold and the Windows 98 Y2K Update has year 2000 date related issue(s). Please refer to the [Microsoft Virtual Machine Year 2000 Product Guide](#) for details and recommendations to address issues.

**MSWALLET** - When entering credit card information in versions of Microsoft Wallet before 2.1.1383, the user must enter month, day, and year for expiration dates beyond 2000. Otherwise, some information may be parsed incorrectly. For example, entering a credit card with expiration 5/01 will be parsed as May 1 of the current year.

**DIALER.EXE** - Phone Dialer applet. The view call log option doesn't display date as expected after successful completion of telephone call. If date is adjusted to the year 2000, the date will display as 100, 101, 102, etc.

**COMCTL32.DLL** - When Regional Settings from Control Panel is set to use 2 digits for years, the Date/Time Picker function may not return the proper date. To ensure proper

handling of dates, set Regional Settings to 4-digit date handling.

**TIMEDATE.CPL** - Time and Date control applet - When the date is set to February 29 the applet will display the 29th day on years other than leap years when using the tumblers to scroll the year ahead or back.

**DOCPROP.DLL** - When viewing the properties of Microsoft Wordpad or Word documents and setting custom date information, the year 2000 will not be accepted as a valid entry when entered as "00". Two-digit dates are assumed to be in the 1900s and if the time zone is set to Far East, the date properties will lose a day when the user enters the year as 2000.

**IO.SYS** - If the system is booted at a precise point when the RTC (Real Time Clock) date rolls over at midnight, the system clock may display an inaccurate time/date. Rebooting the computer corrects this problem.

**MSDADC.DLL** - OLE DB year 2000 issues for data coercion library are:

**If coding to ADO,**

**AND** the ADO Recordset includes Date data types, such as: adDate, adDBDate, adFileTime, or adDBTimeStamp.

**AND** a date format in which periods are used instead of slashes for date separator (01.01.98 instead of 01/01/98)

**AND** the specified year is less than 60,

**THEN** Data Convert (msdadc.dll) may translate the date as a time. For example, 01.01.01 (January 1, 2001) could be converted to 01:01:01 (December 30, 1899, 1:01:01 a.m.).

**If coding directly to OLE DB, the same case exists:**

If the user is converting from a variant (BSTR, VARIANT or PROPVARIANT) to date datatypes, such as:

DBTYPE\_DATE

DBTYPE\_DBDATE

DBTYPE\_DBTIME

DBTYPE\_FILETIME

DBTYPE\_DBTIMESTAMP

**AND** a date format in which periods are used instead of slashes for date separator (01.01.98 instead of 01/01/98),

**AND** the specified year less than 60,

**THEN** Data Convert (msdadc.dll) may translate the date as a time. For example, 01.01.01 (January 1, 2001) could be converted to 01:01:01 (December 30, 1899, 1:01:01 a.m.).

**VDHCP.386** - Winipcfg /all - IP Leases obtained on or after 3/01/2000 are reported as having been obtained the previous day. The system date is displayed correctly but the DHCP client reports an incorrect date.

**XCOPY32.MOD** - When using xcopy in real mode with the optional parameter /D:date, xcopy does not accept years entered as 2 digits except for the years 80 - 99. The message "Invalid date" is displayed. When using xcopy in protected mode (from within Windows) 2-digit dates are accepted but are recognized as being within the 1900s (02/05/01 is seen as 02/05/1901).

**MFC40.DLL** - Performing a File\Save after the year 1999 creates a .nfo file with a date stamp that displays the year incorrectly (01/01/2000 displays as 01/01/100).

**Common Date Usage Errors:**

**JScript Date.getYear() & Date.setYear() methods** The JSCRIPT method .getYear() returns a 2-digit string for years within the operational range up to 1999. The method returns a 4-digit string for years within the operational range from 2000. Web authors can use the method .getFullYear(), which returns 4-digit dates. For more information please check out the [Microsoft Developer Network article](#).

**INTL.CPL.** For International versions of Windows 98 where a user can choose between localized and non-localized Gregorian system calendars (in Control Panel/Regional Settings), the century window can be configured individually for each Gregorian calendar. An error occurs when applications that use Visual Basic, such as Access, convert a date that utilizes the century window settings for the default calendar, while a user would expect instead that the currently selected calendar and settings would be used. This does not affect English versions of Windows 98.

This is an issue with customizable date setting that a user should be aware of, and not a year 2000 issue. This issue can be worked around and resolved in the following manner:

If you change the century window setting in Control Panel\Regional Settings for one Gregorian calendar, change all other Gregorian calendars to the same century window. For example, when changing one calendar century window from 1930-2029 to 1936-2035, change all other Gregorian calendar century windows to the same date range.

**How the product handles dates:****Storage:**

Dates are stored internally as 4-digit dates. MS-DOS file system APIs are an exception. MS-DOS® file system APIs use a year offset from 1980 to store dates. When a program gets a date from an MS-DOS® API the program must add 1980.

**Two-digit shortcut handling:**

MS-DOS® DATE command accepts dates in both 2-digit and 4-digit formats. If the user enters a 2-digit value less than 80, the Date command assumes it to be 20XX. Also, the MS-DOS® file system APIs return a year offset from 1980. The programmer has to add 1980 to the date value returned to get the appropriate date. Win32 APIs are not affected by this.

Explorer (EXPLORER.EXE) by default displays 2-digit dates to provide application compatibility for older programs. To view 4-digit dates, select 4-digit dates in Control Panel, Regional Settings.

**Testing guidelines and recommendations:****Microsoft Jet Database Engine 3.5 and Microsoft Office 97**

When users try to synchronize two members of a replica set that was created before the year 2000, and the current date on the computer is after the year 2000, a synchronization message might appear. This is because of how the expression service mishandles date entries in the MSysExchangeLog table in replicas. When a replica set created before the year 2000 is compacted after the year 2000, exchange information relating to synchronizations after the year 2000 is deleted from the MSysExchangeLog table. After this information is deleted, the generation information in the MSysExchangeLog table and the MSysGenHistory table do not match, and the replicas cannot be synchronized. To resolve this issue, download the latest Microsoft Office 97 Service Release from the Microsoft Web site at <http://officeupdate.microsoft.com/>

the year 2000. This problem is created by flaws in the computer hardware and in low-level BIOS software provided by other vendors. If users are going to test for this, Microsoft recommends executing the tests on a "test-bed" machine rather than a production machine. Please see the article Windows Operating System Interactions with BIOS and Real Time Clock in the white paper section for further information.

**Legend of Symbols:**

- \* Indicates the product is compliant, with recommended customer action. This indicates a prerequisite action is recommended which may include loading a software update or reading a document.
- # Indicates the product is compliant, with acceptable deviations from Microsoft's standard of compliance. An acceptable deviation does not affect the core functionality (ex: data integrity) or stability (ex: reliability) of the product.
- + Indicates the product is compliant, with pending software updates. Future maintenance actions will be recommended shortly.

**Note:** Compliance ratings given for each product assume that all recommended actions have been taken.

If after reviewing this information you have additional questions related to this product,

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## Windows 98 SP 1, 4.10.1998 (English) - 32-Bit Win

Product Summary	
Product: Windows 98	Category: Compliant*
Version: SP 1, 4.10.1998	Operating System: 32-Bit Win
Language: English	Release Date: 25 Jun 1998
Operational Range:	01 Jan 1980 - 31 Dec 2035
Prerequisites:	Windows 98 Year 2000 Updates; Updated Microsoft Virtual Machine; Outlook Express 4.01 software update
Product Dependencies:	None
Clock Dependencies:	PC BIOS
Last Updated:	22 Jul 1999

### Product Details

#### Windows 98 Service Pack 1

**Product Maintenance:** While Microsoft continues to recommend that customers install the most current Service Pack/Release for non-Year 2000 reasons, we understand that, for many reasons, this may not be possible. In order to aid our customers' Year 2000 efforts, Microsoft intends to maintain Windows 98 as compliant through January 1, 2001. Newer Service Packs are also to be maintained as compliant, and may include additional non-Year 2000 updates. This is intended to minimize the Year 2000 as a reason to upgrade.

#### Updated Information

Additional year 2000 issues have been identified in our on-going tests (April 1999) of Windows 98 and they are detailed below. A software update that addresses these issues has been made available in July 1999.

The Windows 98 Year 2000 update that was made available in December 1998 will continue to be available, and will be the foundation for this subsequent update.

### INSTALLATION OF WINDOWS 98 YEAR 2000 UPDATES

#### Windows 98 users:

Please start the Windows Update service from the link on the Start menu. This will prompt you to install the appropriate year 2000 updates for your Windows 98 system.

#### All other users:

For information on Windows 98, please go to the [Windows 98 Web site](#).

To download individual year 2000 updates for Windows 98, go to the [Windows 98 Update for Corporate IT Managers](#).

If you need to update a computer without Internet connectivity, you can order the Year 2000 Resource Center CD by calling 1-888-MSFT-Y2K or from the following Microsoft Web site: [www.microsoft.com/year2000](http://www.microsoft.com/year2000).

### RESOLVED PRODUCT ISSUES:

#### Outlook Express Issue (Q234680/Q234681)

If Outlook Express (OE) 4.01 (Service Pack 1 or Service Pack 2) receives an IMAP mail message or a News message with a 2-digit year as the sent date, the date can be misinterpreted under certain conditions. If the 2-digit year is anything other than 99, OE will assume the century value is the same as the current century. If the current year is 2000, and a 2-digit year date (message) is received as 97, then the year will be interpreted as

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### Issues resolved with Year 2000 Update #2 (released June 1999)

**OLE Automation:** The Microsoft Automation library contains routines for interpreting two 2-digit years and provides a convenient way for applications to create unambiguous (serial) dates. In Windows 98 the current two 2-digit year cutoff is 2029. This means that two 2-digit years beginning with 30 will be interpreted as being in the 1900s, i.e. 1/1/30 is converted to 1/1/1930, irrespective of the user's century window settings in Control Panel\Regional Settings\Date tab.

**DOS Xcopy** For systems using the International date format "yy-mm-dd" 2-digit years are not handled correctly. When a system is configured to use the date format "yy-mm-dd" in Control Panel \ Regional Settings, xcopy will not accept 00 for the year 2000.

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### Previously Resolved Issues

Microsoft identified and updated the following issues found in Windows 98 with the existing Windows 98 Year 2000 update.

**MICROSOFT VIRTUAL MACHINE** Year 2000 issues have been reported in connection with Microsoft virtual machines based on the Sun Microsystems Java Development Kit (versions 1.1.1-1.1.5). Applications written in Java that make use of the java.txt.SimpleDateFormat class library may parse 4-digit dates incorrectly. **Note:** The Microsoft Virtual Machine Version 2405 (2424) that ships with Windows 98 Gold and the Windows 98 Y2K Update has year 2000 date related issue(s). Please refer to the Microsoft Virtual Machine Year 2000 Product Guide <http://www.microsoft.com/technet/promo/javavm.htm> for details and recommendations to address issues.

**MSWALLET** - When entering credit card information in versions of Microsoft Wallet before 2.1.1383, the user must enter month, day, and year for expiration dates beyond 2000. Otherwise, some information may be parsed incorrectly. For example, entering a credit card with expiration 5/01 will be parsed as May 1 of the current year.

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**IO.SYS** - If the system is booted at a precise point when the RTC (Real Time Clock) date rolls over at midnight, the system clock may display an inaccurate time/date. Rebooting the computer corrects this problem.

**MSDADC.DLL** - OLE DB year 2000 issues for data coercion library are:

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**AND** a date format in which periods are used instead of slashes for date separator (01.01.98 instead of 01/01/98)

**AND** the specified year is less than 60,

**THEN** Data Convert (msdadc.dll) may translate the date as a time. For example, 01.01.01 (January 1, 2001) could be converted to 01:01:01 (December 30, 1899, 1:01:01 a.m.).

**If coding directly to OLE DB, the same case exists:**

If the user is converting from a variant (BSTR, VARIANT or PROPVARIANT) to date datatypes, such as:

DBTYPE\_DATE

DBTYPE\_DBDATE

DBTYPE\_DBTIME

DBTYPE\_FILETIME

DBTYPE\_DBTIMESTAMP

**AND** a date format in which periods are used instead of slashes for date separator (01.01.98 instead of 01/01/98),

**AND** the specified year less than 60,

**THEN** Data Convert (msdadc.dll) may translate the date as a time. For example, 01.01.01 (January 1, 2001) could be converted to 01:01:01 (December 30, 1899, 1:01:01 a.m.).

**VDHCP.386** - Winipcfg /all - IP Leases obtained on or after 3/01/2000 are reported as having been obtained the previous day. The system date is displayed correctly but the DHCP client reports an incorrect date.

**XCOPY32.MOD** - When using xcopy in real mode with the optional parameter /D:date, xcopy does not accept years entered as 2 digits except for the years 80 - 99. The message "Invalid date" is displayed. When using xcopy in protected mode (from within Windows) 2-digit dates are accepted but are recognized as being within the 1900s (02/05/01 is seen as 02/05/1901).

**MFC40.DLL** – Performing a File\Save after the year 1999 creates a .nfo file with a date stamp that displays the year incorrectly (01/01/2000 displays as 01/01/100).

**Common Date Usage Errors:**

**JScript Date.getYear() & Date.setYear() methods** The JSCRIPT method .getYear() returns a 2-digit string for years within the operational range up to 1999. The method returns a 4-digit string for years within the operational range from 2000. Web authors can use the method .getFullYear(), which returns 4-digit dates. For more information please check out the [Microsoft Developer Network article](#).

**INTL.CPL.** For International versions of Windows 98 where a user can choose between localized and non-localized Gregorian system calendars (in Control Panel/Regional Settings), the century window can be configured individually for each Gregorian calendar. An error occurs when applications that use Visual Basic, such as Access, convert a date that utilizes the century window settings for the default calendar, while a user might expect instead that the currently selected calendar and settings would be used. This does not affect English versions of Windows 98.

This is an issue with customizable date setting that a user should be aware of, and not a year 2000 issue. This issue can be resolved in the following manner:

If you change the century window setting in Control Panel\Regional Settings for one Gregorian calendar, change all other Gregorian calendars to the same century window. For example, when changing one calendar century window from 1930-2029 to 1936-2035, change all other Gregorian calendar century windows to the same date range.

**How the product handles dates:**

**Storage:**

Dates are stored internally as 4-digit dates. MS-DOS file system APIs are an exception. MS-DOS® file system APIs use a year offset from 1980 to store dates. When a program gets a date from an MS-DOS® API the program must add 1980.

**Two-digit shortcut handling:**

MS-DOS® DATE command accepts dates in both 2-digit and 4-digit formats. If the user enters a 2-digit value less than 80, the Date command assumes it to be 20XX. Also, the MS-DOS® file system APIs return a year offset from 1980. The programmer has to add 1980 to the date value returned to get the appropriate date. Win32 APIs are not affected by this.

Explorer (EXPLORER.EXE) by default displays 2-digit dates to provide application compatibility for older programs. To view 4-digit dates, select 4-digit dates in Control Panel, Regional Settings.

**Testing guidelines and recommendations:**

**Microsoft Jet Database Engine 3.5 and Microsoft Office 97**

When users try to synchronize two members of a replica set that was created before the year 2000, and the current date on the computer is after the year 2000, a synchronization message might appear. This is because of how the expression service mishandles date entries in the MSysExchangeLog table in replicas. When a replica set created before the year 2000 is compacted after the year 2000, exchange information relating to synchronizations after the year 2000 is deleted from the MSysExchangeLog table. After this information is deleted, the generation information in the MSysExchangeLog table and the MSysGenHistory table do not match, and the replicas cannot be synchronized. To resolve this issue, download the latest Microsoft Office 97 Service Release from the Microsoft Web site at

<http://officeupdate.microsoft.com/>

### Hardware

Some PCs reset the system date to 1980 or other invalid dates when the computer reaches the year 2000. This problem is created by flaws in the computer hardware and in low-level BIOS software provided by other vendors. If users are going to test for this, Microsoft recommends executing the tests on a "test-bed" machine rather than a production machine. Please see the article Windows Operating System Interactions with BIOS and Real Time Clock in the white paper section for further information.

### Legend of Symbols:

- \* Indicates the product is compliant, with recommended customer action. This indicates a prerequisite action is recommended which may include loading a software update or reading a document.
- # Indicates the product is compliant, with acceptable deviations from Microsoft's standard of compliance. An acceptable deviation does not affect the core functionality (ex: data integrity) or stability (ex: reliability) of the product.
- + Indicates the product is compliant, with pending software updates. Future maintenance actions will be recommended shortly.

**Note:** Compliance ratings given for each product assume that all recommended actions have been taken.

If after reviewing this information you have additional questions related to this product,.

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## **Appendix C Royce Instrument Corporation's Y2K Compliance Statement**

The following statement was found on the company's web site at URL:  
<http://www.royceinst.com/techbullet.html>.

All of Royce Instrument Corporation's analyzers are inherently capable of handling the year 2000. The firmware in the analyzers does not make use of a calendar in any of its computation or trending information. It uses relative time and not absolute time. It is for this reason, that Royce Instrument Corporation's equipment will NOT have problems due to the turn of the century.

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