

**Customer Software Release Notice**  
for  
**VS Operating System**

**Release 07.53.01**  
**November, 1998**

**Int 1122**

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## **PREFACE**

This Customer Software Release Notice (CSRN) provides important information for using the files in Release 07.53.01 of the VS Operating System. It describes the enhancements included in the release, and the procedures for installation. This notice also contains system requirements, a list of problems corrected since the previous release, and a list of restrictions and special considerations that apply to the release.

The CSRN is organized as follows:

Chapter 1 describes enhancements to the VS Operating System including new device support and enhancements to utilities, device controller microcode and printer microcode.

Chapter 2 details minimum hardware and software requirements.

Chapter 3 lists problems corrected since the last general release.

Chapter 4 describes restrictions and special considerations that apply to this release.

Chapter 5 lists the files included in this package.

Chapter 6 provides installation instructions.

Addendum A provides information concerning the VS Operating System License Agreement.

# CHAPTER 1 ENHANCEMENTS

## 1.1 VS OPERATING SYSTEM

The VS Operating System has several enhancements and additions that should be noted. The enhancements and additions include:

Logon/Logoff processing has been improved.

## 1.2 UTILITIES AND RELATED FILES

### BACKUP

- Added Year 2000 support.
- Added support for the 2238V4 tape drive.

### TAPEINIT

- Added support for the 2238V4 tape drive.

### PROCEDURE INTERPRETER

The &DATE4 function has always been documented as returning a date string in the MMDDYYYY format although on initial release the format being returned was YYYYMMDD format. This problem was reported and corrected in release 7.53.00 of the Procedure Interpreter.. Unfortunately this has had a serious impact on users who previously used and manipulated the date string in YYYYMMDD format. To provide both formats for customers the built-in &DATE8 function has been added to the previous incorrect YYYYMMDD format. This will require little modification to procedures being affected. Please review the section below for a detailed explanation of the differences in these two built-in functions.

#### Enhancement for new DATE8 Built-In Function

&DATE8 extracts an eight-character string that represents the system date in the form of YYYYMMDD, where YYYY represents the year, MM represents the month, and DD represents the day of the month. In order to retrieve the year successfully the proper Operating System must be used. The 7.53 baseline of VS Operating Systems support the 4-digit year facility. Using any

other Operating System in conjunction with this function will not provide the desired result. Be sure to read the General Rules carefully to be sure this is the proper function to be used. It is recommended that if running an Operating System prior to 7.53 that the DATE function be used in lieu of the DATE8 function.

### 1.2.1 General Rules

**&DATE8 requires no input parameters.**

An eight-character string value is returned in the form of YYYYMMDD, where YYYY represents the year, MM represents the month, and DD represents the day of the month. If the Operating System being run is prior to the 7.53 baseline the year results will contain 00 in the century digits.

### 1.2.2 General Format

```
&date8
```

### 1.2.3 Example

```
procedure
declare &saved-date string(8)
declare &formatted date string(8) initial " / / "
assign &saved-date = &date8
assign &formatted date(1,2) = &saved date(5,2)
assign &formatted date(4,2) = &saved date(7,2)
assign &formatted date(7,4) = &saved date(1,4)
```

In the preceding example, if the date is December 15, 1986, the final value of &formatted date becomes 12/15/1986. If the Operating System being run is prior to the 7.53 baseline the final value of &formatted date will be 12/15/0086. In this case the use of the DATE function would be highly recommended.

## 1.3 CP9/CP11 SYSTEM BOOT FILES

**@MCCP11@**

- Added support for 128 MB of memory

**@MCRCU@**

*Added support for the following:*

- 2279V7 9.0 GB fixed SCSI disk drive
- 2288V3 2.6 GB removable disk drive
- 2288V-3H-SE 2.3 GB rewriteable disk drive

## **1.4 DEVICE CONTROLLER MICROCODE**

### **@50V68**

*Added support for the following:*

- 2279V7 9.0 GB fixed SCSI disk drive
- 2288V3 2.6 GB removable SCSI disk drive
- 2288V-3H-SE 2.3 GB Rewriteable disk drive

### **@50V68E**

*Added support for the following:*

- 2279V7 9.0 GB fixed SCSI disk drive
- A 9GB (2279V7) partition within a HPSS storage array.
- 2288V3 2.6 GB removable SCSI disk drive
- 2288V-3H-SE 2.3 GB Rewriteable disk drive

### **@70V67**

- Cache memory utilization has been modified.

### **@70V68**

*Added support for the following:*

- 2279V7 9.0 GB fixed SCSI disk drive
- 2288V3 2.6 GB removable SCSI disk drive

- A 9GB (2279V7) partition within a HPSS storage array
- 2288V-3H-SE 2.3 GB Rewriteable disk drive

## **CHAPTER 2**

### **HARDWARE AND SOFTWARE REQUIREMENTS**

#### **2.1 HARDWARE REQUIREMENTS**

Release 07.53.01 is supported on CP8, CP9, CP10, CP11 (genned as a CP9), CP12, CP14 and CP16 systems and requires a minimum of 2 MB of physical memory.

#### **2.2 SOFTWARE REQUIREMENTS**

This section summarizes the minimum software revision levels required to run this release. For information regarding the recommended software levels of Wang applications, please refer to your Wang Support Center or Wang VS Data Bits.

<b>SOFTWARE</b>	<b>RELEASE LEVEL</b>
System Console Unit (CP10 and CP14)	A2.20.00
System Console Unit (CP8 and CP12 with PC280)	B3.20.00
System Console Unit (CP8 and CP12 with PC Classic)	03.20.00
Small VS RCU Class Diagnostic Package	02.09.00

<b>Central Processing Unit (CPU) Microcode</b>	
CP8 Microcode	08.80.65 08.81.65 (FPU)
CP9 Microcode	09.80.20
CP10 Microcode	10.80.12 10.81.05 (VS12000 Model 550)
CP11 Microcode	09.81.15
CP12 Microcode	12.80.13
CP14 Microcode	14.80.05
CP16 Microcode	16.80.00

Extended Data Management System (XDMS)                      01.53.00

VSSUBS                      01.00.17



## **CHAPTER 3**

### **PROBLEMS CORRECTED**

#### **3.1 VS OPERATING SYSTEM**

<i>CTS Number</i>	<i>Problem Description</i>
E011742	Protocol 2 remote user, may hang in a GETPARM screen. User ends up in a PAUSE status. Must re-IPL to get rid of the task. This problem has been resolved.
E083992	System hung. Logger's MBOX is full and Logger is awaiting space in it's own MBOX to log the open of a new log file.
E102053	When attempting to change printer queue entry information it results in a ERRHALT. This problem has been corrected.
E108947	The limit for MAX CXEs per task is too low.
E115844	@SYSTSK@ crashes when changing the print queue.
E124408	A problem which prevented IBMCOPY from working has been corrected.

<i>PTR Number</i>	<i>Problem Description</i>
M200023699	Added the capability to perform an Operator Find (PF14) on the priority field.
M410011387	@TSKGMR@ cancels with Timer not set.
M800026775	PGFX when trying to halt a presentation services protocol 2 I/O.
M800027256	Sporadic PGPTs and PCNTs in pager.
M800027525	Paging assignments for workstations will now be retained across IPLs.
M800027587	A user with the HELP Key disabled via SECURITY can now be forced into HELP. This user would have one option: (1) Continue Processing.

M800027608	ULUM - task in UNLINK.
M800027646	Fixed a problem in which users were unable to print a file via "Manage Files and Libraries" with a lowercase character.
M800027649	@SYSTSK@ PCDS when processing IVRQ message for Print-System 30 printer.
Internal	The debugger hangs on entry when run from a remote workstation or via LightSpeed.

## **3.2 UTILITIES AND RELATED FILES**

### **COPY**

A problem has been corrected in the COPY utility in which leap years were not being handled correctly.

### **PROCEDURE INTERPRETER**

The correction to the &DATE4 format made in release 7.53.00 has had a negative impact to users who were using the previous version of the &DATE4 built-in function with the YYYYMMDD format. In order to allow these procedures to remain with as little impact as possible the new &DATE8 function is provided for use in lieu of the &DATE4 built-in function. Please review the enhancements section of this CSRN for a detailed explanation of the differences in these two built-in functions.

It has been reported that some users are attempting to use the 7.53 series of the Procedure Interpreter on Operating Systems prior to 7.53.00. Although the Procedure Interpreter will run on these operating systems the attempt to use unsupported features may cause unexpected results. The DATE4 feature was found to be one of these features. In this case the YYYY format was not returning zeros as expected but sometimes illegible results. The Procedure Interpreter now retrieves the date as before but insures that the century digits not provided by pre-7.53.00 operating systems contains valid zeros instead of illegible text.

## **3.3 PRINTER MICROCODE**

N/A

### **3.4 CP9/CP11 SYSTEM BOOT FILES**

N/A

### **3.5 WORKSTATION MICROCODE**

N/A

### **3.6 TAPE MICROCODE**

N/A

### **3.7 DEVICE CONTROLLER MICROCODE**

**@70V67**

A problem has been corrected in which non workstation devices, such as printers, attached to WACS would sometimes fail to load code.

A problem in which successful retries in data transfers were not being reported as soft errors has been corrected.



## **CHAPTER 4**

### **RESTRICTIONS AND SPECIAL CONSIDERATIONS**

#### **4.1 VS OPERATING SYSTEM**

VS Operating System 07.53 has system license support. The IPL process will be affected by this addition. Please refer to the Installation Instructions for more information concerning the installation and IPL process.

If upgrading from an Operating System release prior to 07.52.00, the QUEUE file (in @SYSWORK on the system volume) MUST be scratched. Using an old QUEUE file may cause the system to appear "hung".

Users are unable to run WP if they are running from a workstation that is CLOG'd back on to a local system via a multi-hop. The workstation stays in the WPEMU screen. If an attempt is made to cancel via HELP-PF16, and then CLOGOFF, the cluster will drop. (M200023633)

Running a program across the RSF cluster can hang the system if the remote program resides on a multi-volume set. (M200023694)

Wang VS BACKUP does not support APPEND to the 2238V4 5 GB tape drive. If the APPEND function is required, users should run USI's BACKBURNER utility.

Multiple CEXITs have been a feature of the Operating System since the release of 7.50.00. With the release of 7.53.01, CEXITs are, by default, NOT multiple use. In order to SET a multiple use CEXIT, the user must specify SETMULTI rather than SET in the CEXIT call. Each SETMULTI CEXIT should be set only once per link level. Setting a SETMULTI CEXIT more than once per link level will waste GETMEM. Note that for each CEXIT SET or SETMULTI call, there should be a corresponding CEXIT RESET call. CEXITs are automatically cleared on an UNLINK. A CEXIT CANCEL will clear all CEXITS for the current link level. A SETMULTI CEXIT will NOT be automatically cleared if more CEXITs are set.

Below is a list of the patches and specials which are not sourced into Release 07.53.01. Replacement patches are available and are included with this Operating System in library "@PATCHS@".

<i>Original Patch</i>	<i>Replacement Patch</i>	<i>Description</i>
RSDP1130	RSDP1133	The VS asks for the date and time even if SCU passes it, if an IPL takes place 8.34

minutes or less from midnight. Also, if midnight crossing takes place during the early part of an IPL, the date reverts to 2/24/1975.

RSDP1076 RSDP1134

FILSRVs are inhibited when logons are inhibited even if 'Inhibit Logons and Logoff user at Program Completion" has been specified.

RSDP1077 RSDP1135

"Excessive Errors" messages in Operator hang the system, the user cannot be forced off because the screen is updating so quickly.

RSDP1118 RSDP1136

Increase the size of the GETMEM pool to 14MB.

## **4.2 UTILITIES AND RELATED FILES**

### **PROCEDURE INTERPRETER**

The Procedure Interpreter must be named @PROC@. An attempt to use the interpreter by any other name will fail.

It has been reported that some users are attempting to use the 7.53.00 series of the Procedure Interpreter on Operating Systems prior to 7.53.00. Although the Procedure Interpreter will work on these operating systems, features designed to support year 2000 compliancy will not work as documented in this CSRN. For example, the &Date4 and &Date8 built-in functions, while returning a complete 4-digit year on the 7.53.00 or later operating system, will return zeros in the century position of the 4-digit year on those operating systems which are not year 2000 compliant.

## **4.3 CP9/CP11 SYSTEM BOOT FILES**

### **@MCRCU@**

Workstation 0: The location of workstation 0 is determined by switch settings on the RCU board. If workstation 0 is an asynchronous workstation, the terminal must be configured to operate at a baud rate of 19200 bps, 1 stop bit, ODD Parity, and 8 data bits.

SCSI devices should not be powered off and on during or after IPL.

## **4.4 DEVICE CONTROLLER MICROCODE**

### **@50V68 / @50V68E**

SCSI devices should not be powered off and on during and after IPL.

For 9GB support, software must be enabled by Wang.

There is no IPL support for the 9GB (2279V7) disk drive.

### **@70V67**

When configuring peripheral band on the controller, the network connection must be in place and the peripheral band modem powered on, in order for the controller to operate properly.

The IOPMON event trace facility and device memory peruse are not implemented.

### **@70V68**

Each device attached to the 70V68 IOC must have a valid WANG copyright.

The SCSI IOC must occupy position (ID) 7 on the SCSI bus.

If a disk device on the IOC is used as the system (IPL) volume, that disk device must be configured according to the default configuration.

Users of 2259V1 streamers should be aware that while we guarantee default (high) density recording mode for tapes written from BOT, tapes appended to will be written at the tape's previously recorded density, be it low or high. This is due to the unit's upward compatibility with the manufacturer's earlier streamer, which we do not support.

Although system IPL is functional from either of the supported RAID units (2277V1 and 2277V2), we do not recommend doing so. In the unlikely event that a reconstruct would be necessary, the system would have to be IPL'd from a volume other than the volume requiring reconstruction. The RAIDSTAT utility will not function otherwise.

The following restrictions exist if either of the supported RAID units' (2277V1 and 2277V2) location on the SCSI bus is Target x, Lun y, where y is greater than 0.

- 1) The volume's use as an IPL disk is not possible based on the description on page A-1 for the default configuration, as it applies to system IPL.
- 2) SYSCON's Easy IPL display (PF8) will never show the volume name.
- 3) VS/VM virtual SCSI support will be non-existent for volumes physically connected in this manner.

In order to IPL off of a disk on the SCSI IOC, the disk must be configured in a way that is consistent with the default configuration for the SCSI IOC. The following is the default configuration for the IOC:

LDN	Port	Target	LUN
00	0	0	0
01	0	1	0
02	0	2	0
03	0	3	0
04	0	4	0
05	0	5	0
06	0	6	0
07	0/1	7	0
(reserved for IOC itself)			
08	1	0	0
09	1	1	0
0A	1	2	0
0B	1	3	0
0C	1	4	0
0D	1	5	0
0E	1	6	0

**NOTE:** The default configuration supports only Logical Unit Number (LUN) 0. Therefore, the system (IPL) volume must occupy LUN 0.

**Example 1:** Suppose that the system (IPL) volume is target 1 on port 0 of the SCSI IOC. In our default configuration, the Logical Device Number (LDN) for this device is '1'. Therefore, in the GENEDIT configuration file for this IOC, the system volume must be configured as unit '1' on the IOC, the second entry in the device configuration screen.

**Example 2:** Suppose that the system (IPL) volume is target 5 on port 1 of the SCSI IOC. In our default configuration, the Logical Device Number (LDN) for this device is 'D'. Therefore, in the GENEDIT configuration file for this IOC, the system volume must be configured as unit 'D' on the IOC, the 14th entry in the device configuration screen.

**IF THE SYSTEM VOLUME IS NOT CONFIGURED ACCORDING TO THE ABOVE RULES, THE IPL WILL FAIL.**



# CHAPTER 5 MEDIA CONTENTS

## OVERVIEW

This chapter describes the files that make up Release 07.53.01 of the VS Operating System.

The information in this chapter will help to determine which files to maintain on the system volume. To conserve space on the system volume, delete all unnecessary files after completing the installation of this release.

The CODE column indicates whether or not a file should be installed on a customer system. The code consists of at most three characters: the first is an alphabetic character which indicates the installation option; the second is a digit which restricts the code to a certain CP type only; the third is used to indicate a footnote, which may describe additional information or documentation about the file.

The installation option codes are as follows:

- M MANDATORY:** This file must always be installed. This installation option code applies primarily to the operating system files, files required during IPL, and certain utilities such as SECURITY.
- C HARDWARE CONFIGURATION DEPENDENT:** This file should be deleted if the corresponding device is not part of the system configuration.
- U USER-DEFINED:** This file must reside on the system volume, but the contents are user defined. This installation option code applies to data files used by system programs (for example, the USERLIST file, which is maintained by the SECURITY utility).
- O OPTIONAL:** This file should be included only if it will be used. Most utilities are assigned this code.

## 5.1 VS OPERATING SYSTEM KERNAL

LIBRARY = @SYSTEM@

Code	Module	Version	Description
M	@CPYDMP@	07.53.01	Procedure to copy dumps

M	@FFM	07.53.01	File Manager Task
M	@GENMSG@	07.53.01	Displays "System Generation in Progress" message
M	@IOCDRT@	07.53.01	IOC Routing Table
M	@IOCLOD@	07.53.01	IOC Load
M	@IOSLOAD	07.53.01	Loads Microcode to devices
M	@LOGGER@	07.53.01	Security Logging Task
M	@OPER@	07.53.01	Operator Console
M	@PAGE	07.53.01	Paging server to open paging to remote volumes
M	@PRTTSK@	07.53.01	Printer Task
M	@QUEVER@	07.53.01	Queue Verification
M	@RSFSYNC	07.53.01	@RSF Synchronization task
M	@SHARER@	07.53.01	Sharer Task
M8	@SYS008@	07.53.01	VS CP8 Operating System Nucleus
M9	@SYS009@	07.53.01	VS CP9/11 Operating System Nucleus
M10	@SYS010@	07.53.01	VS CP10 Operating System Nucleus
M12	@SYS012@	07.53.01	VS CP12 Operating System Nucleus
M14	@SYS014@	07.53.01	VS CP14 Operating System Nucleus
M16	@SYS016@	07.53.01	VS CP16 Operating System Nucleus
M	@SYSCPR@	07.53.01	Command Processor
M	@SYSDBG@	07.53.01	System Debug
M	@SYSDMS2	07.53.01	Data Mgmt. System 16 MB Virtual Addressing
M	@SYSGEN@	07.53.01	Dynamic System Generation

M	@SYSINIT	07.53.01	System Initialization
M	@SYSSERV	07.53.01	System Services
M	@SYSTSK@	07.53.02	System Task
M	@TSKMGR@	07.53.01	User Task Manager
M	@WSLOAD@	07.53.01	Loads workstation devices during IPL.
M	BUILDALT	07.53.01	Builds DMS Alternate Index Structure

**LIBRARY = @ERRMSG@**

M	WLREMSG		Runtime error messages for all system programs written in PL/I.
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## **5.2 PACKAGED UTILITIES AND RELATED FILES**

**LIBRARY = @SYSTEM@**

M	@GENSSL	07.53.01	Genedit SSL Subroutines
M	@PROC@	07.54.01	Procedure Interpreter.
M	PROC	07.54.01	Procedure interface for @PROC@.
O	ACLEXTR	07.53.01	EXTRACLs default output or print ACL.
O	ACLREAD	07.53.01	Reads a file's ACL.
O	ACLREPL	07.53.01	Replaces a file's ACL.
O	ACLSET	07.53.01	SETS specified default ACL.
O	ASSEMBLE	01.09.05	VS Assembler
O	AUTOPAT	07.53.01	Autopatch utility
O	AUXPRINT	04.00.00	Auxiliary Print Utility
O	BACKUP	07.53.01	Backup Utility
O	-WTEFORM	000277	BACKUP form file

O	CIP	07.53.01	Compress in Place Utility
O	CIP	07.53.01	Compress in Place Utility
O	CLOGON	07.53.01	Cluster Logon Utility
O	CONVTLOG	07.53.01	Security Log Conversion Utility
O	COPY	07.53.02	Copy disk files, libraries and volumes
O	COPY2200	07.53.01	VS Intersystem copy program
O	-WTCDEAT	07.53.01	COPY2200 - external file
O	COPYOIS	02.04.03	Program to copy OIS files
M	DEVLIST	07.53.01	System Device List
O	DISK643	06.43.20	OS 6.43 to 7.20 upgrade utility
O	DISK713	07.20.35	OS 7.13 to 7.20 upgrade utility
O	DISK714	07.20.35	OS 7.14 to 7.20 upgrade utility
O	DISK720	03.75.01	OS 7.2X to 7.50 upgrade utility
O	DISK730	04.25.01	OS 7.3X to 7.50 upgrade utility
O	DISK740	04.33.02	OS 7.4X to 7.50 upgrade utility
O	DISKINIT	07.53.01	Disk initialization utility
O	DISPLAY	07.53.01	File display utility
O	DMSTX	07.53.01	DMS/TX Utility
O	-FRMRLBAK	000077	DMS/TX forms file
O	-WXRDMMS	07.53.01	DMS/TX program file
O	DMSTXCVT	07.53.01	DMS/TX recovery blocks
O	FASTLINK	07.53.01	Permanently open files utility
O	FILSRV	07.53.01	File Server

O	FLOPYDUP	07.53.01	Utility to duplicate diskettes
O	FONTCNTL	07.06.08	Font Control Utility
O	-FONTFORM	000074	Form file for FONTCNTL
O	FORMCNTL	07.18.43	Forms Definition Utility
M	GENEDIT	07.53.01	Configuration Utility
M	-GENEDITF	000224	GENEDIT form file
O	GETMON	07.53.01	GETMEM Monitor
O	GLOSSARY	02.01.11	Multistation glossary compiler
O	IBMCOPY	07.53.01	Copy Wang diskettes to IBM format and IBM diskettes to Wang format
O	INFO	02.03.15	INFO Program file
O	INITMANY	07.53.01	Utility to initialize multiple diskettes
O	IOELOG	07.53.01	I/O Error Log utility
O	IOTRACE	07.53.01	I/O Tracer
M	LICENSE	07.53.01	Utility to create License Print Fax Form
O	LISTVTOC	07.53.01	VTOC Analysis Utility
O	LOGPRINT	07.53.01	Utility to display the security logging file.
O	PATCH	07.53.00	Utility to patch programs and files
O	POOLSTAT	07.53.01	Displays paging pool status
O	PSPRINT	07.00.08	PostScript source file to VS print file utility
O	PSPRT	07.00.08	PostScript source file to VS print file subroutine
O	RAIDSTAT	07.53.01	RAID status utility
O	RSFMON	07.53.01	Utility to monitor RSF activity
O	RSAFXFER	02.11.00	RSAF transfer file

O	RSFUTIL	07.53.01	Utility Task to set RSF synchronization
O	SCSISTAT	07.53.01	SCSI status utility
M	SECURITY	07.53.01	Security Utility
U	-@SECFILE	None	Default System Security Options file
O	SHRSTAT	07.53.01	Sharer Statistics
O	SORT	07.20.07	Sort Utility
O	SSL	07.53.01	Shared Subroutine Library
O	SSLCONVT	None	SSL Catalog System Services Procedure
O	SWP5301	07.53.01	Sweeper File
O	TAPECOPY	07.53.01	Tape to disk/disk to tape copy utility
O	TAPEDUMP	07.53.01	TAPEDUMP utility
O	TAPEINIT	07.53.02	Tape initialization utility
O	UNHANG	07.53.01	UNHANG utility
U	USERLIST	None	System User List (NOTE: Contains one userid CSG, with no password)
O	VERIFY	07.53.01	Indexed File Verification Utility
O	VOLCOPY	07.53.01	Backup - track to track backup program
O	WSLOAD	07.10.05	Restore default personality file
O	WSPERCNV	07.10.07	Personality file conversion utility
O	WSPERSON	07.10.06	Personality editor
O	WSRSTR	07.10.05	Restore personality program
O	WSSAVE	07.10.05	Save personality program

**LIBRARY = COLORLIB**

O	4245SRC	None	Sample source file
O	COLORCNV	01.00.06	Program file
O	COLORDEF	01.00.08	Program file
O	COLORIO	01.00.06	Program file
O	COLORMSG	01.00.00	Screen and error messages
O	COLOROPT	01.00.08	Program file
O	IMAGES	None	Sample image file
O	PALETTES	None	Sample palette file
O	SCREENS	None	Sample screen file

**LIBRARY = GL**

O	SAMPLE	None	Personality program
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**LIBRARY = GLOBJ**

O	SAMPLE	None	Personality program
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**LIBRARY = WSPER**

O	@STDFILE	07.10.03	Default personality records for supported 07.10.00 devices
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### **5.3 Info Documents and Help Text**

**LIBRARY = @DOCLIB@**

O	BUPHELP	07.10.00	On-line Help Text for the BACKUP utility
O	INFOHELP	02.03.09	On-line Help Text for the INFO utility
O	IOEHELP	01.00.01	On-line Help Text for the I/O Error Log Utility
O	MTDUTIL	None	On-line Help Text for WSPERSON

## 5.4 Form Files

**LIBRARY = @SYSFRM@**

O INFOFRM 000053 INFO Form file

## 5.5 User Macros

**LIBRARY = @MACLIB@** (*all are Optional*)

\$BCTGEN	\$RDFGEN	\$VERS13	\$VERSION	@BCMSG@	ACLEMPY
ACLIST	ACTEST	ALEX	AXD1	AXDGEN	BCE
BCTBL	BCTGEN	BEGTRANS	BIJFIRST	BIJLOG	CALL
CANCEL	CEXIT	CHARGEN	CHARVAR	CHECK	CHPASSWD
CLOGON	CLOSE	CNTROLOG	COMMAND	COMMIT	COPYFDR
CREALIAS	CREATE	CXT	DEACL	DELALIAS	DELETE
DESTROY	DEXIT	DFB	DISMOUNT	DISPTAB	DMSDEFS
DMSPROCS	ENDLOCAL	EXTOPID	EXTRACL	EXTRACT	EXTRACT#
EXTRD	EXTRD#	FDR1	FDR2	FDR3	FIB
FILEI	FILLTAB	FMTLIST	FREEALL	FREEBUF	FREEHEAP
FREESHR	FREEXRTS	GETACL	GETALIAS	GETBUF	GETHEAP
GETLOGON	GETMAP	GETNUDEF	GETOPEN	GETPARM	GETSECUR
GETXRTS	HALTIO	HALTIO#	IACCEPT	ICANALS	ICHECK
ICLREXIT	ICONNECT	ICREATE	IDECLINE	IDESTROY	IDISCMAP
IDISCONN	IFORWARD	ILKUPALS	IPCB	IPCCLLN	IPCLOSE
IPCOPNLN	IPCSETV	IPCXRCT	IPM	IOPEN	IPREVIEW
IQUIESCE	IREACTVT	IREGALS	IRETRIEV	ISEND	ISETEXIT
IWAIT	KEYLIST	LINK	LINKPARM	LISTEN	LNKB
LOADCOD#	LOADCODE	LOADFONT	LOCAL	LOCALS	LOGOFF
LOGR	LSB	MFIB	MOUNT	MOUNT#	MSGLIST
MSMAP	MSUNMAP	OPEN	OPEN#	OPSMGOPR	OPTPARMS
PATCH	PCEXIT	PCONTROL	PROCINFO	PROTECT	PUTLOG
PUTPARM	RANDGEN	READ	READACL	READFDR	READVTOC
RECEIVE	REGS	RENAME	REPACL	RESETIME	RETURN
REWRITE	RFB	RLBKFDCL	ROLLBACK	SBREAK	SCGLOBS
SCRATCH	SCREATE	SDELETE	SENER	SET	SET#
SETACL	SETIME	SETNUDEF	SETRECOV	SETSECUR	SEXIT
SORTACL	SSLALS	SSLINFO	START	STATINIT	SUBMIT
SYSERPLI	SYSERROR	SYSMSGID	TABLERA	TASKCTL	TCOMPLET
TCOPTION	TEMADD	TEMDELET	TEMLIST	TEMQUERY	TEMUPDAT
TIMDAYCV	TIME	TINVOKE	TKILL	TPLAB	TPLB2
TRACE	TRANSMIT	UCBMSG	UFB	UFB#	UFBDISK

UFBGEN	UFBGEN#	UNITRES	UNITRES#	UPDATFDR	USERSEMA
VALIDATE	VFYUSRPW	VOL1	VOLINFO	VOLINFO#	VSETINFO
WPCALL	WRITE	WV46MAP	XIO	XMIT	

## 5.6 LOADABLE PRINTER MICROCODE AND RELATED FILES

### 5.6.1 Loadable Printer Microcode

LIBRARY = @SYSTEM@

C	@5535S	05.01.08	5533, 5535 printer microcode
C	@MC2273S	06.00.04	5573, 5574 printer microcode
C	@MC2281S	07.00.03	6581W, 6581WC printer microcode
C	@MC32EM	07.00.07	3211 emulation microcode
C	@MC55741	06.01.04	5574-1 printer microcode
C	@MC5575	05.01.07	5575 printer microcode
C	@MC5575X	07.01.09	5575X printer microcode
C	@MC5577	07.00.12	5577 printer microcode
C	@MC5578	07.01.00	5578 printer microcode
C	@MCAPTRE	07.00.04	EADC/WACS Printer microcode
C	@MCBNPIB	07.00.00	BANDPIB VSDP microcode
C	@MCDM50E	07.00.18	DM50/300 printer microcode
C	@MCDW55	07.00.04	DWOS55 printer microcode
C	@MCDW60	07.00.03	DWOS60 printer microcode
C	@MCEPLO	07.01.00	Epson LQ/HQ 300 printer microcode
C	@MCLCS15	07.02.08	LCS15-2 printer microcode
C	@MCLDP8	07.00.24	LDP8 printer microcode
C	@MCLDP8E	07.00.24	LDP8E printer microcode

C	@MCLIS12	07.00.29	LIS-12/24 microcode
C	@MCLM900	07.00.29	LM-400/700/900 printer microcode
C	@MCLNPIB	07.00.00	LINEPIB microcode
C	@MCLPS8	07.01.42	LPS-8 printer microcode
C	@MCLQE	07.00.02	Epson LQ emulation printer microcode
C	@MCPCL5	07.00.20	HPPCL5 printer microcode
C	@MCPM15E	07.01.07	PM015 DP printer support
C	@MCPM17E	07.01.05	PM017/18 DP printer support
C	@MCPM19E	07.01.02	PM019 DP printer support
C	@MCPS30	08.00.12	Print System 30 Microcode
C	@MCPSPIB	07.00.09	PSPIB printer microcode

## 5.6.2 Printer Font Files

### LIBRARY = @30710PN (5577) 10 pitch fonts

C	COURIER	Courier
C	DRAFT	Draft

### LIBRARY = @30F06LA (LCS15) 20 pitch landscape fonts

C	COURBDOB	Courier Bold Oblique
C	COURBOLD	Courier Bold
C	COURIER	Courier
C	COUROB	Courier Oblique

### LIBRARY = @30F06PA (LCS15) 20 pitch portrait fonts

C	COURBDOB	Courier Bold Oblique
C	COURBOLD	Courier Bold
C	COURIER	Courier
C	COUROB	Courier Oblique

**LIBRARY = @30F07LA (LCS15) 17 pitch landscape fonts**

C	COURBDOB	Courier Bold Oblique
C	COURBOLD	Courier Bold
C	COURIER	Courier
C	COUROB	Courier Oblique

**LIBRARY = @30F07PA (LCS15) 17 pitch portrait fonts**

C	COURBDOB	Courier Bold Oblique
C	COURBOLD	Courier Bold
C	COURIER	Courier
C	COUROB	Courier Oblique

**LIBRARY = @30F08LA (LCS15) 15 pitch landscape fonts**

C	COURBDOB	Courier Bold Oblique
C	COURBOLD	Courier Bold
C	COURIER	Courier
C	COUROB	Courier Oblique

**LIBRARY = @30F08PA (LCS15) 15 pitch portrait fonts**

C	COURBDOB	Courier Bold Oblique
C	COURBOLD	Courier Bold
C	COURIER	Courier
C	COUROB	Courier Oblique

**LIBRARY = @30F10LA (LCS15) 12 pitch landscape fonts**

C	COURBDOB	Courier Bold Oblique
C	COURBOLD	Courier Bold
C	COURIER	Courier
C	COUROB	Courier Oblique

**LIBRARY = @30F10PA (LCS15) 12 pitch portrait fonts**

C	COURBDOB	Courier Bold Oblique
C	COURBOLD	Courier Bold
C	COURIER	Courier
C	COUROB	Courier Oblique

**LIBRARY = @30F12LA (LCS15) 10 pitch landscape fonts**

C	COURBDOB	Courier Bold Oblique
C	COURBOLD	Courier Bold
C	COURIER	Courier
C	COUROB	Courier Oblique

**LIBRARY = @30F12PA (LCS15) 10 pitch portrait fonts**

C	COURBDOB	Courier Bold Oblique
C	COURBOLD	Courier Bold
C	COURIER	Courier
C	COUROB	Courier Oblique

**LIBRARY = @31010LN (LDP8) 10 pitch landscape fonts**

C	COURBOLD	Courier Bold (internal)
C	COURIER	Courier
C	LTRGOTAS	Letter Gothic ASCII
C	LTRGOTLG	Letter Gothic LEGAL

**LIBRARY = @31010PN (LDP8) 10 pitch portrait fonts**

C	COURBOLD	Courier Bold (internal)
C	COURIER	Courier (internal)
C	LTRGOTAS	Letter Gothic ASCII
C	LTRGOTLG	Letter Gothic LEGAL

**LIBRARY = @31012LN (LDP8) 12 pitch landscape fonts**

C	LTRGOTBD	Letter Gothic Bold
C	LTRGOTHC	Letter Gothic
C	LTRGOTIT	Letter Gothic Italic
C	PRESBD	Prestige Elite Bold
C	PRESELTE	Prestige Elite
C	PRESIT	Prestige Elite Italic

**LIBRARY = @31012PN (LDP8) 12 pitch portrait fonts**

C	LTRGOTBD	Letter Gothic Bold
C	LTRGOTHC	Letter Gothic

C	LTRGOTIT	Letter Gothic Italic
C	PRESAS	Prestige Elite ASCII
C	PRESBDAS	Prestige Elite Bold ASCII
C	PRESBDLG	Prestige Elite Bold LEGAL
C	PRESELTE	Prestige Elite
C	PRESFS	Prestige Elite Full Science
C	PRESIT	Prestige Elite Italic
C	PRESITAS	Prestige Elite Italic ASCII
C	PRESITLG	Prestige Elite Italic LEGAL
C	PRESLG	Prestige Elite LEGAL
C	PRESSC	Prestige Elite Science

**LIBRARY = @31015LN (LDP8) 15 pitch landscape fonts**

C	DRAFT	Draft (Internal)
C	PRESAS	Prestige Elite ASCII
C	PRESLG	Prestige Elite LEGAL

**LIBRARY = @31015PN (LDP8) 15 pitch portrait fonts**

C	DRAFT	Draft (Internal)
C	PRESAS	Prestige Elite ASCII
C	PRESELTE	Prestige Elite
C	PRESFS	Prestige Elite Full Science
C	PRESLG	Prestige Elite LEGAL

**LIBRARY = @31310LN (LIS12/24) 10 pitch landscape font**

C	COURIER	Courier
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**LIBRARY = @31310PN (LIS12/24) 10 pitch portrait font**

C	COURIER	Courier
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**LIBRARY = @31610LN (LPS8) 10 pitch landscape font**

C	COURIER	10 pitch landscape font
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**LIBRARY = @31610PN (LPS8) 10 pitch portrait font**

C	COURIER	10 pitch portrait font
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**LIBRARY = @31810PN (LM900) 10 pitch fonts**

C	DRAFT	BL173010	Draft regular
C	DRAFTAS	SM300010	Draft ASCII
C	DRAFTLIT	BL173010	Draft light
C	DRAFTMED	BL173010	Draft regular
C	GOTHIC	BL173010	Gothic regular
C	MEMO	BL173010	Memo regular

**LIBRARY = @31812PN (LM900) 12 pitch fonts**

C	DRAFT		Draft regular
C	DRAFTAS	SM300010	Draft ASCII font
C	DRAFTLIT		Draft light
C	DRAFTMED		Draft medium
C	GOTHIC		Gothic regular
C	MEMO		Memo regular

**LIBRARY = @31815PN (LM900) 15 pitch fonts**

C	GOTHIC	CM100066	Gothic regular
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**LIBRARY = @31910PN**

C	COURIER	JM111010	10 Pitch Courier regular (5578)
C	DRAFT	JM076010	10 Pitch Draft regular (5574)

**LIBRARY = @31B10LN (PS30) 10 pitch landscape fonts**

C	COURBOLD	Courier Bold (internal)
C	COURIER	Courier (internal)
C	COURITAL	Courier Italic (internal)

**LIBRARY = @31B10PN (PS30) 10 pitch portrait fonts**

C	COURBOLD	Courier Bold (internal)
C	COURIER	Courier (internal)
C	COURITAL	Courier Italic (internal)

**LIBRARY = @31B12LN (PS30) 12 pitch landscape fonts**

C	COURBOLD	Courier Bold (internal)
C	COURIER	Courier (internal)
C	COURITAL	Courier Italic (internal)

**LIBRARY = @31B12PN (PS30) 12 pitch portrait fonts**

C	COURBOLD	Courier Bold (internal)
C	COURIER	Courier (internal)
C	COURITAL	Courier Italic (internal)

**LIBRARY = @31B15LN (PS30)**

C	DRAFT	15 pitch landscape Draft (internal)
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**LIBRARY = @31B15PN (PS30)**

C	DRAFT	15 pitch portrait Draft (internal)
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**LIBRARY = @31C10LN (PCL5) 10 pitch landscape fonts**

C	COURBOLD	Courier Bold (internal)
C	COURIER	Courier (internal)
C	COURITAL	Courier Italic (internal)
C	LTRGOTAS	Letter Gothic ASCII
C	LTRGOTLG	Letter Gothic LEGAL 10 pitch landscape fonts

**LIBRARY = @31C10PN (PCL5) 10 pitch portrait fonts**

C	COURIER	Courier (internal)
C	COURBOLD	Courier Bold (internal)
C	COURITAL	Courier Italic (internal)
C	LTRGOTAS	Letter Gothic ASCII
C	LTRGOTLG	Letter Gothic LEGAL

**LIBRARY = @31C12LN (PCL5) 12 pitch landscape fonts**

C	COURBOLD	Courier Bold (internal)
C	COURIER	Courier (internal)
C	COURITAL	Courier Italic (internal)

C	LTRGOTBD	Letter Gothic Bold
C	LTRGOTHC	Letter Gothic
C	LTRGOTIT	Letter Gothic Italic
C	PRESBD	Prestige Elite Bold
C	PRESELTE	Prestige Elite
C	PRESIT	Prestige Elite Italic

**LIBRARY = @31C12PN (PCL5) 12 pitch portrait fonts**

C	COURBOLD	Courier Bold (internal)
C	COURIER	Courier (internal)
C	COURITAL	Courier Italic (internal)
C	LTRGOTBD	Letter Gothic Bold
C	LTRGOTHC	Letter Gothic
C	LTRGOTIT	Letter Gothic Italic
C	PRESAS	Prestige Elite ASCII
C	PRESBD	Prestige Elite Bold
C	PRESBDAS	Prestige Elite Bold ASCII
C	PRESBDLG	Prestige Elite Bold LEGAL
C	PRESELTE	Prestige Elite
C	PRESFS	Prestige Elite Full Science
C	PRESIT	Prestige Elite Italic
C	PRESITAS	Prestige Elite Italic ASCII
C	PRESITLG	Prestige Elite Italic LEGAL
C	PRESLG	Prestige Elite LEGAL
C	PRESSC	Prestige Elite Science

**LIBRARY = @31C15LN (PCL5) 15 pitch landscape fonts**

C	DRAFT	Draft (Internal)
C	PRESAS	Prestige Elite ASCII
C	PRESLG	Prestige Elite LEGAL

**LIBRARY = @31C15PN (PCL5) 15 pitch portrait fonts**

C	DRAFT	Draft (Internal)
C	PRESAS	Prestige Elite ASCII
C	PRESELTE	Prestige Elite
C	PRESFS	Prestige Elite Full Science
C	PRESLG	Prestige Elite LEGAL

**LIBRARY = @31E10PN (LINPIB) 10 pitch fonts**

C	DRAFT	LN800010	Draft (DP)
C	HSDRAFT	LN800010	Hi Speed Draft
C	HSDRAFTB	LN800010	Hi Speed Draft B
C	HSDRAFTC	LN800010	Hi Speed Draft C
C	OCRA	LN800010	OCR-A
C	OCRB	LN800010	OCR-B
C	ROMN	LN800010	Roman (NLQ)

**LIBRARY = @31E12PN (LINPIB) 12 pitch fonts**

C	DRAFT	LN800010	Draft (DP)
C	HSDRAFT	LN800010	Hi Speed Draft
C	HSDRAFTB	LN800010	Hi Speed Draft B
C	HSDRAFTC	LN800010	Hi Speed Draft C
C	ROMN	LN800010	Roman (NLQ)

**LIBRARY = @31E15PN (LINPIB) 15 pitch fonts**

C	DRAFT	LN800010	Draft (DP)
C	HSDRAFT	LN800010	Hi Speed Draft
C	HSDRAFTB	LN800010	Hi Speed Draft B
C	HSDRAFTC	LN800010	Hi Speed Draft C
C	ROMN	LN800010	Roman (NLQ)

**LIBRARY = @32706LA (PSPIB) 20 pitch landscape font**

C	COURBDOB	Courier Bold Oblique
C	COURBOLD	Courier Bold
C	COURIER	Courier
C	COUROB	Courier Oblique

**LIBRARY = @32706PA (PSPIB) 20 pitch portrait font**

C	COURBDOB	Courier Bold Oblique
C	COURBOLD	Courier Bold
C	COURIER	Courier
C	COUROB	Courier Oblique

**LIBRARY = @32708LA (PSPIB) 15 pitch landscape font**

C	COURBDOB	Courier Bold Oblique
C	COURBOLD	Courier Bold
C	COURIER	Courier

C      COUROB      Courier Oblique

**LIBRARY = @32708PA (PSPIB) 15 pitch portrait fonts**

C      COURBDOB      Courier Bold Oblique  
C      COURBOLD      Courier Bold  
C      COURIER      Courier  
C      COUROB      Courier Oblique

**LIBRARY = @32710LA (PSPIB) 12 pitch landscape fonts**

C      COURBDOB      Courier Bold Oblique  
C      COURBOLD      Courier Bold  
C      COURIER      Courier  
C      COUROB      Courier Oblique

**LIBRARY = @32710PA (PSPIB) 12 pitch portrait fonts**

C      COURBDOB      Courier Bold Oblique  
C      COURBOLD      Courier Bold  
C      COURIER      Courier  
C      COUROB      Courier Oblique

**LIBRARY = @32712LA (PSPIB) 10 pitch landscape fonts**

C      COURBDOB      Courier Bold Oblique  
C      COURBOLD      Courier Bold  
C      COURIER      Courier  
C      COUROB      Courier Oblique

**LIBRARY = @32712PA (PSPIB) 10 pitch portrait fonts**

C      COURBDOB      Courier Bold Oblique  
C      COURBOLD      Courier Bold  
C      COURIER      Courier  
C      COUROB      Courier Oblique

**LIBRARY = @32910PN (EPLQ) 10 pitch portrait fonts**

C      COURIER      LQ800010      Courier font  
C      COURITAL      LQ800010      Courier Italic font

C	DRAFT	LQ800010	Draft font
C	OCRA	LQ800010	OCR-A font
C	OCRB	LQ800010	OCR-B font
C	ORATOR	LQ800010	Orator-S font
C	ORATORN	LQ800010	Orator font
C	PRES	LQ800010	Prestige Elite font
C	PRESIT	LQ800010	Prestige Elite Italic font
C	QUIC	LQ800010	Quick Gothic (HQ) font
C	ROMN	LQ800010	Roman font
C	ROMNIT	LQ800010	Roman Italic font
C	SANS	LQ800010	San Serif font
C	SANSIT	LQ800010	San Serif Italic font
C	SCRIIT	LQ800010	Script Italic font
C	SCRIPT	LQ800010	Script font
C	SOUV	LQ800010	ITC Souvenir (HQ) font
C	SOUVIT	LQ800010	ITC Souvenir Italic (HQ)

**LIBRARY = @32912PN (EPLQ) 12 pitch portrait fonts**

C	COURIER	LQ800010	Courier font
C	COURITAL	LQ800010	Courier Italic font
C	DRAFT	LQ800010	Draft font
C	HSDRAFT	LQ800010	HS Draft Gothic (HQ) font
C	OCRA	LQ800010	OCR-A font
C	OCRB	LQ800010	OCR-A font
C	PRES	LQ800010	Prestige Elite font
C	PRESIT	LQ800010	Prestige Elite Italic font
C	QUIC	LQ800010	Quick Gothic (HQ) font
C	ROMN	LQ800010	Roman font
C	ROMNIT	LQ800010	Roman Italic font
C	SANS	LQ800010	San Serif font
C	SANSIT	LQ800010	San Serif Italic font
C	SCRIIT	LQ800010	Script Italic font
C	SCRIPT	LQ800010	Script font
C	SOUV	LQ800010	ITC Souvenir (HQ) font
C	SOUVIT	LQ800010	ITC Souvenir Italic (HQ)

**LIBRARY = @32915PN (EPLQ) 15 pitch portrait fonts**

C	COURIER	LQ800010	Courier font
C	COURITAL	LQ800010	Courier Italic font
C	DRAFT	LQ800010	Draft font
C	PRES	LQ800010	Prestige Elite font
C	PRESIT	LQ800010	Prestige Elite Italic font
C	ROMN	LQ800010	Roman font

C	ROMNIT	LQ800010	Roman Italic font
C	SANS	LQ800010	San Serif font
C	SANSIT	LQ800010	San Serif Italic font
C	SCRIIT	LQ800010	Script Italic font
C	SCRIPT	LQ800010	Script font
C	SOUV	LQ800010	ITC Souvenir (HQ) font
C	SOUVIT	LQ800010	ITC Souvenir Italic (HQ)

**LIBRARY = @IPLOVLY**

C	@0013000		LCS15-2 front panel messages
C	@0013001	7.02.02	LCS15-2 image overlay and error handler
C	@0013002	PV80032001	LCS15-2 prologue file
C	@0098000	1.1	User print engine tables
C	@0223000	.11	LIS-12/24 firmware

**LIBRARY = GP1FONT (LIS12/24)**

C	COURIER		Graphic Stroke
C	MARKER		Graphic Stroke

## **5.7 CP9/CP11 System Boot Files**

**LIBRARY = @SYSTEM@**

M9	@MCCP9@	09.80.20	CP9 CPU microcode
M11	@MCCP11@	09.81.15	CP11 CPU microcode
M9	@MCRCU@	01.08.03	RCU microcode
M9	@SB50801	00.00.03	VS5000 Series TC-1 soft-boot loader microcode
M9	@SB50861	01.03.00	CP9 CPU microcode file
M9	@SB50862	01.00.00	CP9 CPU microcode file
M9	@SB50863	01.00.00	Softboot loader microcode
M9	@SB50864	01.00.00	Softboot loader microcode

## 5.8 Loadable Workstation Microcode

LIBRARY = @SYSTEM@

C	@2246S1	05.01.03	029 with standard keypad
C	@2246S2	05.01.03	2246S with reverse numeric keypad
C	@2246S2B	05.01.05	Microcode for 32K serial DP-only workstation
C	@2246S3	05.01.03	029 w/reverse keypad
C	@4210WM	07.00.00	Microcode for 4210 workstation
C	@4250GH	07.00.00	4250GH workstation microcode
C	@4250GM	07.00.00	4250GM workstation microcode
C	@6300GM	07.00.00	Microcode for graphics workstation
C	@MC2246C	07.00.04	Microcode for serial DP/WP workstation (2246C)
C	@MC2246R	04.03.13	2246 Remote workstation microcode
M	@MC2246S	07.00.01	Microcode for 16K serial DP-only workstation
C	@MC2256A	07.03.00	Microcode for DP support for workstations
C	@MC2256C	07.10.00	Microcode for serial DP/WP workstation (2256C)
C	@MC2266C	05.01.05	Microcode for 48K-RAM DP/WP archiving workstation
C	@MC2266S	05.01.03	Microcode for 32K-RAM DP-only archiving workstation
C	@MC4205	07.00.02	Microcode for the 4205 32K RAM DP workstation
C	@MC4220R	06.01.10	4220 Remote workstation microcode
C	@MC4230	07.10.00	4230 workstation microcode

C	@MC4245	07.10.00	Microcode for the color graphic workstation
C	@MC4250	07.03.04	4250 workstation microcode
C	@MCPCIWS	07.00.00	Microcode for 11X type workstations
C	@MCPCSWS	07.10.00	PCSWS workstation microcode

## 5.9 LOADABLE TAPE MICROCODE

LIBRARY = @SYSTEM@

C	@MC2238V	07.00.00	Streamer tape microcode
C	@MC2509V	06.00.05	Serial 9-Track Tape microcode
C	@MC2529V	05.00.07	Cartridge tape microcode

## 5.10 DEVICE CONTROLLER MICROCODE

LIBRARY = @SYSTEM@

CH	@22V68	01.01.01	22V68 IOC microcode
C8	@23V14	03.02.02	RSF wire cable microcode
C8	@23V24	03.02.02	Microcode for ITC for WIIS
C8	@23V95KN	02.05.03	Microcode for Kennedy Tape
C8	@23V95TX	02.10.11	Telex Tape IOC microcode
C8	@23V96DE	02.06.01	DE controller microcode for the 2110 workstation
C8	@23V96RW	01.07.03	Multiline IOC microcode for remote workstation
C8	@23V97W	05.07.30	928W serial IOC microcode
C8	@23V98	03.05.02	Microcode for SMD Disk IOC
C9	@50V68	01.04.03	VS5000/6000 single-port SCSI IOC microcode

C9	@50V68E	01.01.03	VS5000/6000 single-port Caching SCSI IOC microcode
C9	@50V96DE	01.06.01	2110 microcode for DCC-8 board
C9	@50V97W	02.00.05	50V97 IOC microcode
C9	@50V98	01.02.04	VS5000 SMD IOC microcode
CH	@70V67	01.01.00	Serial IOC microcode
C8	@70V68	03.03.03	VS300/7000/8000/10000/12000 IOC microcode
C8	@70V98E	03.04.44	Caching Disk IOC Microcode
C8	@MC23V46	01.05.01	2110 microcode for LADC boards
C9	@MC50V67	02.00.05	928 serial I/O microcode
CH	@MCWACS	02.06.07	WACS IOC microcode

## **5.11 @ASCII@ MICROCODE (Federal Information Processing Standards - FIPS)**

### **LIBRARY = @ASCII@**

C	@4250GM	B7.00.00	FIPS microcode for 4250 graphics workstation
C	@5535S	A5.01.08	FIPS microcode for Low Cost matrix printer
C	@MC2256A	B7.03.00	Workstation DP support
C	@MC2266C	A5.01.05	FIPS microcode for 8-inch archiving workstation
C	@MC4205	A7.00.02	FIPS microcode for 4205 workstation
C	@MC4220R	A6.01.10	FIPS microcode for 4220R/2233R devices
C	@MC4230	A7.10.00	FIPS microcode for 4230 workstation
C	@MC4245	A7.10.00	FIPS microcode for 4245 workstation

C	@MC5575	A5.01.07	FIPS microcode for 5575 printer
C	@MCDW55	A6.01.03	FIPS microcode for DW55 printer
C	@MCDW60	A6.00.07	FIPS microcode for DW60 printer

**LIBRARY = @SYSAS@**

CH	@23V96DE	RAS 2.06.01	DE controller microcode for the 2110 workstation
C	@50V96DE	RAS 1.06.01	FIPS microcode for 50V96DE DCC-8 board for the 2110 workstation
C	@MC23V46	RAS 1.05.01	LADC 2110 microcode
M9	@MCRCU@	RAS 1.08.03	Resource Control Unit microcode
C	@MCWACS	RAS 2.06.07	WACS IOC microcode

## **5.12 USER DOCUMENTATION**

**O LIBRARY = CSRNLIB**

OS75301	07.53.01	Software Release Notice (this document)
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# CHAPTER 6 INSTALLATION

## 6.1 OVERVIEW

This chapter describes the installation of the VS Operating System Release 07.53.01. Please be sure to carefully read the section entitled "VSOS Software Licensing" (Appendix A) for information concerning changes in the installation and system IPL due to the 07.53 System Licensing Support.

Additional software packages required for installation include:

- Small VS RCU-class Diagnostic Package (CP9/11 systems).
- CP8, CP10, CP12, CP14 and CP16 systems, refer to the appropriate System Console Unit (SCU) Customer Software Release Notice for your system.

## 6.2 PRELIMINARY STEPS FOR UPGRADES

1. Inhibit logons and ensure that all users are logged off the system.
2. Logon to the system as a System Administrator.
3. If installing Release 07.53.01 on a CP8, CP10, CP12, CP14 or CP16 system, be sure to verify that the System Control Unit has been loaded with the current version of CPU microcode.

If installing Release 07.53.01 on a CP9 or CP11 system, be sure to verify that you have loaded the current version of CPU microcode, as follows:

CP9/11: in @SYSTEM@ on the IPL disk

From the SYSCON screen, press PF12 to display system options.

4. If a current backup of the entire system volume is not available, use the BACKUP utility to perform this backup now.
5. When the Operating System is installed, all information in the system QUEUE file will be lost. To ensure your new system is set up exactly as it was prior to the installation, perform the following:

- i. Using Operator's Console functions, note the outstanding jobs and transmissions listed in the Print, Procedure, Transmit, and Receive Queues so that they may be reconstituted after the installation. Alternately, wait for all outstanding jobs and transmissions to finish processing before proceeding.
  - ii. Note the defaults for dual-mode workstations (additional Operator's Consoles), background job classes, printer class assignments, system parameter settings, page pool commitment ratio, and SPOOL/WORK/PAGE volumes.
6. When satisfied that your old system is satisfactorily backed up, proceed to the next section and begin the installation.

### **6.3 SOFTWARE INSTALLATION USING VS BACKUP (All CP Types)**

Refer to the "VS Media, Transfer, and Device Utilities Reference" for instructions on using the BACKUP and DISKINIT utilities.

#### **6.3.1 Running BACKUP**

1. Create a new system volume (for installing the operating system) using the INITIALIZE function of DISKINIT, with IPL VOLUME = YES. Refer to the "VS Media, Transfer, and Device Utilities Reference" for information on setting other options in DISKINIT.
2. Mount the newly initialized volume and the tape containing the Release 07.53.01 Operating System.
3. Using BACKUP, RESTORE Release 07.53.01 from the distribution media to the newly initialized disk.

Use the following specifications:

INPUT screen:

```
VOLUME = (name of distribution media)
DEVICE = TAPE  FUNCTION = RESTORE
ERRDISP  = YES
FILESEQ  =
MOREFILE = NO
SELECT  = NO
```

OUTPUT screen:

VOLUME = (name of new system volume)  
DEVICE = DISK  
CLEAR = NO

OPTIONS screen:

DUPFILES = SCRATCH

LOGFILES screen:

Press ENTER to obtain a log file.

EOJ screen:

Press PF16 or ENTER to terminate BACKUP.

4. Dismount the release media from the tape drive.
5. Verify the existence of file WANGVS in library LICENSE on your new system volume. If this file is not present, please contact the Wang Software Distribution Center or your Wang Representative.

The Wang VS Software Distribution Center can be contacted by the following methods.

Mail:

Wang Laboratories, Inc.  
836 North St.  
Tewksbury, Ma. 01876  
M/S 027-G1B  
Attn: SDC Customer Service

Phone:

(978) 858-8600

FAX:

(978) 858-7043

E-Mail:

SDC.CUSTOMER.SERVICE@WANG.COM

6. CP9 and CP11 systems must load the Small VS RCU-Class Diagnostic Package. Refer to the appropriate Customer Software Release Notice for installation instructions.
7. Using the DISKINIT utility, RELABEL the newly created system volume. The system will not IPL unless it is RELABELed.
8. On completion of the installation, run SSL to provide an ALIAS name of GENSSL for GENEDIT.

- a. Run SSL.
- b. The System Administrator must verify whether the alias GENSSL already exists, and what steps must be taken to continue:

If a GENSSL alias name was created for GENEDIT from a previous installation, exit the utility.

If a GENSSL alias name was created for non-GENEDIT purposes, a substitute alias name must be provided for that function. Once the substitution is complete, go to step 6C to create a new GENSSL alias name for the GENEDIT utility.

If a GENSSL alias does not exist, go to step 6C.

- c. Press PF11 on the MAIN screen of the SSL utility to create the alias name, GENSSL.

Type in the GENSSL alias name.

The SYSVOL (Y/N) parameter should remain blank.

The GENSSL alias name is required in the following location:

```
Volume = System Volume
Library = @SYSTEM@
File    = @GENSSL
```

- d. Press PF-16 to exit the utility.

If these steps are not performed, the following error message will be displayed on the screen when the GENEDIT utility is run:

```
"Error creating static from MAP - SSL possibly not mapped".
```

## 6.3.2 CONFIGURING THE SYSTEM

### NEW SYSTEM CONFIGURATION

1. If you are not IPL'd from the new system volume, do so now, using the PF1 option to specify a minimum configuration. If you are already IPL'd, go to step 2.
2. Run GENEDIT and create a new configuration file for the system.
3. IPL, specifying the new configuration file.
4. Proceed to section 6.4.

### CONFIGURING UPGRADED SYSTEMS

First restore the system configuration files backed up earlier. Use the BACKUP or COPY utility to copy these files from the old system volume to the corresponding library on the new volume.

Also, restore at this time certain other files that will be needed at later stages of the installation. These are: SSL files (e.g., @ALIAS@), print-form definitions (FORMDFFN), and the following security files: @SECFILE, USERLIST, GROUPLIST. Use the BACKUP or COPY utility to copy these files from the library @SYSTEM@ on the old system volume to @SYSTEM@ on the new system volume.

To do this, perform the following steps:

1. IPL from the new system volume, pressing PF1 for a minimum configuration.
2. Run the GENEDIT utility, and configure the drive you will be using to restore your backed-up files. From the main GENEDIT screen, press PF4 to save the new configuration file and exit.
3. IPL, specifying the new configuration file.
4. Run BACKUP or COPY and restore the files mentioned above.
5. Now convert the files just restored to the new format. Run GENEDIT, specifying, one by one, each of the configuration files that you wish to convert. If you wish, you may make changes to the file(s). When you save the file(s), GENEDIT will automatically perform the conversion.

6. If you wish to create new configuration files, do so now and save them.
7. IPL from the new system volume, specifying either a converted or new configuration file, and verify that the system operates correctly.

### **6.3.3 RENAMING THE OLD SYSTEM VOLUME (UPGRADES ONLY)**

To ensure that procedures and programs that reference the system volume do not have to be changed, you should rename the new system volume with the name of the old system volume. To do this:

1. While still IPL'd from the new system volume, rename the old system volume.
2. IPL from the old system volume, and rename the new system volume with the original name of the old system volume.

## **6.4 FINAL STEPS**

1. If you are not IPL'd, do so. Specify the normal configuration file. Inhibit logons.
2. If you have font-loading printers, install the fonts for them as follows:
  - a. Ensure that all font-loading printers are turned off. LIS-12/24 printers may remain powered on to allow them to warm up, but the printer control box must be turned off.
  - b. Run the FONTCNTL utility and install at least one font for each device. (For information on FONTCNTL, refer to the VS System Administration and Analysis Utilities Reference.)
  - c. Turn on the printers. Allow approximately one half minute per printer for initialization to complete. The printer microcode will select the printer after the microcode is loaded and running. Printers with an audible hardware alarm will signal the completion of initialization.

The following instructions apply only to systems that are being upgraded:

3. Verify that the file @TOPLIB@ in library @SYSTEM@ exists on the new system volume.

If @TOPLIB@ is not in library @SYSTEM@, it may be in library @DOCLIB@. If it is, copy the file to @SYSTEM@ and delete the file in @DOCLIB@.

If @TOPLIB@ is not in either @SYSTEM@ or @DOCLIB@, do nothing. The INFO utility will create the file when it is first run on the new system.

4. Also restore any print and data files you may have stored on the old system volume, using the NOCOPY option of BACKUP.
5. Restore the system queues to their pre-installation state, and reassign all system defaults for dual-mode workstations, background jobs and print classes, etc.

## **6.5 INSTALLING TRANSLATED LCS15 FRONT PANEL MESSAGE FILES**

The LCS15 printer has the ability to download front panel message text that has been translated to languages other than English (English is supplied as the default language). The DP microcode downloads the message file at IPL time and, if required, loads it to the printer when the first job is printed.

Standard translation utilities translate the file used by the WP print driver to create the default message file.

To install a translated downloadable message file for DP use, you need to copy the WP message file PRINT.T30FMSG (file T30FMSG in WSPRINT on the system volume) to @0013000 in @IPLOVLY on the system volume. Then perform the following steps:

1. Run COPYOIS.
2. Press PF4 (Copy/Convert OIS File) when the MENU screen appears.
3. On the INPUT screen, enter the system volume name as VOLUME and the string WSPRINT.T30FMSG as the FILE. Specify DEVICE = VS, and CONVERT = NO. Press ENTER.
4. On the OUTPUT screen, enter the system volume name as VOLUME. Specify OUTPUT FILE = @0013000 and LIBRARY = @IPLOVLY. Press ENTER.
5. Press ENTER again when the MENU screen reappears.

The newly installed messages are downloaded and take effect after the next time the printer is IPL'd.

## 6.6 INSTALLING ASCII MICROCODE

When you want to use the ASCII microcode, copy the @ASCII@ Library into the @SYSTEM@ library. Library @ASCII@ may be scratched after copying. Re-IPL your system and the @ASCII@ file replaces the standard microcode file.

**CAUTION:** Adding the ASCII microcode replaces the standard microcode. Both the ASCII microcode and the standard microcode cannot reside in @SYSTEM@ and be used at the same time.

## 6.7 COMPLETING THE INSTALLATION OF WSPERSON

To use the on-line help facility for WSPERSON, the document file MTDUTIL must be in the library @DOCLIB@ on the system volume. In addition, @DOCLIB@ must be installed in INFO as a topic library with the internal title Wang Documents. Similarly, the file MTDUTIL must be installed as an INFO topic with an appropriate title, e.g., "Media, Transfer, and Device Utilities". To ensure that this is the case, carry out the following steps:

1. From the Command Processor screen, press PF5 to enter the Manage Files and Libraries screen. Verify that the library @DOCLIB@ exists on the system volume, and that it contains the file MTDUTIL.
2. Next, run the INFO utility.
3. If @DOCLIB@ is the only topic library INFO recognizes, you will be placed directly in the Topic Selection screen. Verify that "Wang Documents" is listed at the top of the screen as the topic library. If this is the case, go on to step 4. If not, go to step 5.

If INFO contains more than one topic library, the Topic Library Selection screen will appear. TAB to the "Wang Documents" entry, and press ENTER. The Topic Selection screen will appear. If "Wang Documents" is not listed, go to step 5 for instructions on how to create this entry. Otherwise, continue with step 4.

4. At the Topic Selection screen, verify that there is an entry for Media, Transfer, and Device Utilities either by tabbing through the list of topics, or by using the PF9 (Find) key. If this entry exists, the verification is complete. Press PF16 twice to exit INFO. Otherwise, go to step 5.
5. If either the topic library "Wang Documents" or the topic "Media, Transfer, and Device Utilities" is missing, refer to the "VS INFO User's

Guide" for instructions on how to install libraries and topics. When you have completed the installation, repeat the verification above.

## **6.8 MISCELLANEOUS NOTES**

When you have completed all phases of the installation of Release 07.53.01 and are satisfied that every feature is set correctly, use the BACKUP utility to back up your new system volume.

When you are using VSGF graphics printing on LIS-12 or LIS-24 printers, run FONTCTL and install the graphic stroke fonts. You must install COURIER in GP1FONT font number 999, and MARKER in GP1FONT font number 998. Do not install either of these fonts as the default font.

When you send a job to the queue before the printer completes the power-on sequence, the printer may not post the "Change Form" message that precedes the first job.

At this time you may wish to install any additional software, such as compilers or word processing (WP) software on the new system volume. Refer to the specific installation guide or Customer Software Release Notice for each software package.

The VS system does not IPL the printer if a file is queued to the printer prior to turning on the printer.



## **APPENDIX A**

### **SOFTWARE LICENSING**

If upgrading from an Operating System prior to release 7.53.00, a License File will be required for full functionality. This document describes the VS Operating System License requirements.

The License File is a 2048 byte file to be installed in library "LICENSE" as file "WANGVS" on the target IPL volume. It contains the Customer name, NODEID, CPU Serial number, and Wang VSOS License number. This file is interrogated by the Operating System at each IPL and should never be modified or deleted.

The License File is supplied by the Wang Software Distribution Center. Prior to ordering/installing System 7.53.01 you will need to gather the following information for each VS system to be licensed:

#### CUSTOMER NAME

The customer name is the name that the Wang VSOS software license is granted under. This name will be displayed on each Logon screen.

#### NODEID

The node ID is specified in the active VS Configuration file. It is recommended that this field be unique for each machine.

#### CPU SERIAL NUMBER

Each Wang VS machine has a unique serial number usually located on the rear of the cabinet or inside the door.

#### CPU TYPE

Each Wang VS CPU type is displayed within the GENEDIT utility when displaying the appropriate model name.

#### WANG SALES ORDER NUMBER

The Wang Sales Order Number is your license order number.

If you have provided this information at the time of order, your copy of the VS Operating System will contain the appropriate License File. The License File and License Verification Codes will be generated by The Wang Software Distribution Center upon receipt of an order and the information describe above. A License File shipped on the VS Operating System installation tape will be named "WANGVS" and be located in library "LICENSE". You will also find a License Print File, "POxxxxx" where "xxxxx" is your License number in the "LICENSE" library. This print file contains the License Verification Codes which are necessary to reinstall the License File should the License File be inadvertently damaged or deleted.

It is recommended that you create a BACKUP copy of the License and License Print Files and store it in a secure location. You should also create a hard copy printout of the License Print File (which contains the License Verification Codes) and store it in a secure location. Should the need arise to replace the License File simply restore the BACKUP copy to file name "WANGVS" in library "LICENSE" on the appropriate IPL volume or use the License Verification Codes from the hard copy printout of the License Print File to reinstall the License File.

If you do not have a License File on the VS Operating System installation tape you will need to obtain a License File or License Verification Codes from Wang's Software Distribution Center. You can do so by:

1. Running program LICENSE in @SYSTEM@ on your 7.53.01 IPL volume.
2. Enter the requested information and select the PRINT option.
3. Send the PRINT output to Wang's Software Distribution Center by FAX, mail, or telephone:

Mail:

Wang Laboratories, Inc.  
836 North St.  
Tewksbury, Ma. 01876  
M/S 027-G1B  
Attn: SDC Customer Service

Phone:

(01) 978 858-8600

FAX:

(01) 978 858-7043

E-Mail:

SDC.CUSTOMERSERVICE@office.wang.com

Customers in Europe, Africa and the Middle East should contact the European Software Manufacturing and Distribution Centre (ESMDC):

Mail:

Wang Ireland B.V.  
Unit 2B  
Annacotty Industrial Estate  
Annacotty Limerick Ireland

Phone:  
353 61 335 244 X2111

FAX:  
353 61 335 601

Wang's Software Distribution Center will return to you the License Print File that contains the License Verification Codes. During the system IPL process you will need these codes to complete System Generation.

The IPL of the 7.53.01 Operating System requires the existence of the License File on the IPL volume. If your installation tape includes the file, the installation and IPL of the Operating System will occur with no change to the process. If the License File is not on the installation tape, the IPL of the 7.53 Operating System will be interrupted with error screens.

The following screens are displayed during the IPL process when errors are encountered. Descriptions of possible causes and recommended actions are listed.

During System Generation:

\*\*\*\*\*

The Wang VS Operating System License

is either Invalid or Non-existent.

Press enter to continue with minimal  
Operating System support

Or press (PF5) to install a valid License.

\*\*\*\*\*

The Operating System may have encountered an invalid License File. The data (NODEID and CPUTYPE) in the License File may not match the data in the VS Configuration File.

Pressing ENTER allows the system to continue the IPL process. This will give you the capability to investigate and correct the problem. The system functionality will be restricted to usage of Workstation Zero and all disks, printers and tape units defined in the specified VS Configuration File.

To investigate Run the DISPLAY utility to display file WANGVS in library LICENSE to verify that the correct License File has been installed for this machine. Run the GENEDIT utility to verify that the correct NODEID has been defined.

The Operating System may have not found a License File on the IPL volume. Pressing PF5 allows you to enter the License Verification Codes to install a License File. The following screen will then be displayed.

```
*****  
  
Enter the name this license is being granted  
under.  
NAME      = -----  
  
Enter the WSN Networking name used by this  
license.  
NODEID    = -----  
  
Enter the Serial Number of the CPU  
SERIAL    = -----  
  
Enter the CP type for this license.  
CPU       = --  
  
(Enter) Continue - (16/32) Exit.
```

```
*****
```

Enter the data from the appropriate License Print File. The License Print File is supplied by Wang's Software Distribution Center as a file in the library LICENSE on the VSOS Installation tape or as a FAX printout. Data is case sensitive and must be entered exactly as displayed on the printout. Pressing ENTER will display the screen below. Pressing PF16/32 will return you to the "Invalid or Non-existent License File" screen.

\*\*\*\*\*

Enter the LICENSE number from your application response.

LICENSE = -----

Enter the License verification codes.

CODE1 = ----- CODE2 = -----

CODE3 = ----- CODE4 = -----

(Enter) Continue - (16/32) Exit.

\*\*\*\*\*

Enter the data from the License Print File exactly. Pressing ENTER will install the License File. If all the data is correct, the Operating System Generation will continue normally. If the data in the License File does not match the VS Configuration file, the "Invalid or Non-existent License File" screen will be presented again. Pressing PF16/32 will return you to the "Invalid or Non-existent License File" screen allowing you to bring the system up with minimal support or restarting the installation of a valid license.

\*\*\*\*\*

There has been a Unrecoverable Error during the creation of your LICENSE file.

This error is probably the result of Disk Space exhaustion, or a corrupted VTOC.

Press Enter to continue.

Your WANG VS License can be installed after the problem has been corrected.

\*\*\*\*\*

This screen is displayed whenever an error has occurred that prevented the License File from being successfully installed. Pressing ENTER will return you to the "Invalid or Non-existent License File" screen allowing you to bring the system up with minimal support or restarting the installation of a valid

license. Continuing System Generation will give you access to the standard VS utilities to determine the cause of the error.