

DPS7000 to XTA

Evolution Guide

DPS7000/XTA
NOVASCAL 7000

Hardware: DPS7000/XTA



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DPS7000/XTA NOVASCALÉ 7000 DPS7000 to XTA Evolution Guide

Hardware: DPS7000/XTA

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Preface

Scope and Objectives	This manual gives the operating procedures to perform an evolution from a DPS 7000 to a DPS 7000 Extended Twin architecture (DPS 7000/XTA).
Intended Readers	This document is reserved to Bull people and is the proprietary of Bull.
Prerequisites	
Structure	This manual is divided into the following chapters: <ul style="list-style-type: none">Chapter 1: This chapter is a general introduction.Chapter 2: This chapter is a detailed description of the peripheral subsystems reconnection.Chapter 3: This chapter explains the data migration to a DPS 7000/XTA system.Chapter 4: This chapter gives details on the customer production evolution.Appendix A: This chapter gives the Printer Configurations.
	Glossary



Bibliography	<i>V7000 Operator's Guide</i>	47 A2 74US
	<i>V7000 Configuration and Maintenance Guide</i>	77A2 77US
	<i>V7000 Software Installation and Activation Guide</i>	77 A2 88US
	<i>GCOS7 - System Installation Configuration and Updating Guide</i>	47 A2 23US
	<i>GCOS7-V10 System Operator's Guide</i>	47 A2 53US
	<i>DPS 7000/XTA Interop 7 User's Guide</i>	47 A2 91US
	<i>GCOS7 Console Messages Directory</i>	47 A2 61UU
	<i>GCOS7 Messages and Return Codes Directory</i>	47 A2 10UJ

The following manuals are also referenced:

	<i>TDS Administrator's Guide</i>	47 A2 32UT
	<i>TDS TCP/IP User's Guide</i>	47 A2 37UT
	<i>Cartridge Tape Library UNIX Server User's Guide</i>	47 A2 63UU
	<i>ESP</i>	47 A2 92US
	<i>DA7</i>	47 A2 89US
	<i>GCL Programmer's Manual</i>	47 A2 36UJ
	<i>GCOS7-V8/V9 System Administrator's Manual</i>	47 A2 54US
	<i>Generalized Terminal Writer User's Guide</i>	47 A2 55UU
	<i>GCOS7 Network User's Guide</i>	47 A2 94UC
	<i>UFT User's Guide</i>	47 A2 13UC
	<i>DJP User's Guide</i>	47 A2 14UC
	<i>DNS-V4 Terminal Management Reference Manual</i>	39 A2 24DN
	<i>DSA Documentation Directory</i>	39 A4 9726
	<i>Administering the Storage Manager</i>	47 A2 36UF
	<i>Distributed Operator Facility - Programmed Operator User's Guide</i> ...	47 A2 80UC
	<i>Script Manager User's Guide</i>	47 A2 84UC
	<i>File Recovery Facilities User's Guide</i>	47 A2 37UF
	<i>PRUG00X (PR701/801/901) User's Guide</i>	47 A2 00UU

GCOS7 Documentation

The complete GCOS7 document set is available on one CD-ROM. This product is known as CD-DOC. It is delivered with each system or software update, it is updated for each new GCOS7 release. A WEB site is available to download documents which have been updated between 2 CD-ROM versions, its URL is indicated as a link on the CD-ROM itself.

**Syntax
Notation**

The following conventions are used for presenting GCL (and JCL) command syntax.

ITEM	An item in upper case is a literal value, to be specified as shown. The upper case is merely a convention; in practice you can specify the item in upper or lower case.
item	An item in lower case is a non-literal, indicating that a user-supplied value is expected. In most cases it gives the type and maximum length of the value: char105 a string of up to 105 alphanumeric characters name31 a name of up to 31 characters lib78 a library name of up to 78 characters file78 a file name of up to 78 characters star31 a star name of up to 31 characters In some cases, it gives the format of the value: a a single alphabetic character nnn a 3-digit number hh.mm a time in hours and minutes In other cases, it is simply descriptive of the value: device-class condition
<u>ITEM</u>	An underlined item is a default value. It is the value assumed if none is specified.
bool	A boolean value which is either 1 or 0. A boolean parameter can be specified by its keyword alone, optionally prefixed by "N". Specifying the keyword alone always sets the value to 1. Prefixing the keyword with "N" always sets it to 0.
{ }	Braces indicate a choice of values. Only one can be selected.
[]	Square brackets indicate that the enclosed item is optional. An item not enclosed in square brackets is mandatory.



- () Parentheses indicate that a single value or a list of values can be specified. A list of values must be enclosed by parentheses, with each value separated by a comma or a space.
- ... Ellipses indicate that the item concerned can be specified more than once.
- + = \$ * / - . Literal characters to be specified as shown.

EXAMPLE 1:

```
[      { IMMED          } ]
[ WHEN = { [dd.mm.yy.] . hh.mm } ]
[      { +nnnn{W|D|H|M} } ]
```

This means you can specify:

1. Nothing at all (WHEN=IMMED applies).
2. WHEN = IMMED (the same as nothing at all).
3. WHEN = 22.30 to specify a time (and today's date).
4. WHEN = 10.11.87.22.30 to specify a date and time.
5. WHEN = +0002W to specify 2 weeks from now.
6. WHEN = +0021D to specify 21 days from now.
7. WHEN = +005H to specify 5 hours from now.
8. WHEN = +0123M to specify 123 minutes from now.

EXAMPLE 2:

```
PAGES = (dec4[-dec4][,dec4] ...)
```

Indicates that PAGES must be specified. Valid entries are a single value, or a list of values enclosed in parentheses. The list can consist of single values separated by a comma, a range of values separated by a hyphen, or a combination of both. For example: PAGES = (2,4,10-25,33-36,78,83).

EXAMPLE 3:

```
[ REPLACE = { bool | 0 } ]
```

This is a boolean parameter whose default value is zero. You can specify:

1. Nothing at all (REPLACE = 0 applies)
2. REPLACE = 0 or simply NREPLACE
3. REPLACE = 1 or simply REPLACE

□





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1. General

1.1 General Prerequisite Conditions

The evolution to DPS 7000/XTA (Extended Twin Architecture) should be scheduled several weeks before the new system is installed. This step should begin at the sale level in conjunction with the customer service and also with the help of the product line pre-sales and the support organization.

The DPS 7000/XTA system has to coexist with the current configuration during the evolution period. This phase has to be planned before delivery between the customer service, the salesmen and the customer.

If the customer wants to test the DPS 7000/XTA system for a while, and if he wishes to reconnect some elements of the current configuration (Disk or cartridge devices for example) it may be impossible to use the two systems at the same time (lack of peripherals).

GCOS7 BU offers specific services (rent, loan material) to solve such difficulties. Contact GCOS7 expertise Center (CE7) through the sales or support channels.

1.1.1 General Prerequisite Conditions on the Old System

1.1.1.1 GCOS7 Release

The DPS 7000 system to be replaced should run the GCOS7 Release with the same compatibility level code as the one used on DPS 7000/XTA:

- GCOS7-V9 TS 9866 on DPS 7000
- GCOS7-V10 TS 9870 on DPS 7000/XTA.



1.1.1.2 System Configuration

The main part of the « evolution to DPS 7000/XTA » operation is the transport of the customer data and programs from the old system to the new one.

Direct subsystem disks reconnection is not possible. Data have to be saved then restored.

This operation is mainly done using save/restore mechanisms and therefore implies a compatible device to write and read the removable media in the two system configurations.

This removable media may be a tape, an ½" cartridge or a DLT cartridge. 8mm cassettes are not connectable on DPS 7000/XTA systems. A service is available to help the customer to transform its 8mm park to another type of media.

Otherwise the evolution has to be cancelled and the scenario has to be reworked.



1.1.2 General Prerequisite Conditions on the New System

1.1.2.1 System Configuration

As stated before, the new system configuration **MUST** include a tape/cartridge device compatible with the one of the old system configuration. Otherwise you have to suspend the evolution scenario to rework the global evolution plan.

It seems to be evident but it will be better if we repeat that some dedicated disk devices are mandatory in the DPS 7000/XTA configuration to begin the evolution mechanism.

The GCOS7 volume disk images are seen as Windows™ files for the DPS 7000/XTA platform and these files have to be created before the restore operation. The allocation of these files is done using a specific V7000 utility (refer to the V7000 Configuration & Maintenance Guide).

A GCOS7 configuration must be already defined (CPU, Memory, I/O resources, devices, ...). Otherwise the operations to be done are described in the V7000 Configuration & Maintenance Guide.

1.1.2.2 System State

The customer data and programs will only be restored using GCOS7 utilities.

The DPS 7000/XTA system is supposed to be in the GCOS Ready state even if the system disk is not yet customized (R Disk equivalent). This state is sufficient to run GCOS7 volume and/or file restore utilities.

Otherwise the operations to be done are described in the V7000 Configuration & Maintenance Guide



1.2 DPS 7000/XTA System General Description

DPS 7000/XTA system is a new DPS 7000 offer. The platform is based on a new architecture and the evolution from the DPS 7000 architecture to the new one is different from the previous evolutions. You will see in the following chapters some recommendations which will help you to perform this operation.

1.2.1 Architecture Overview

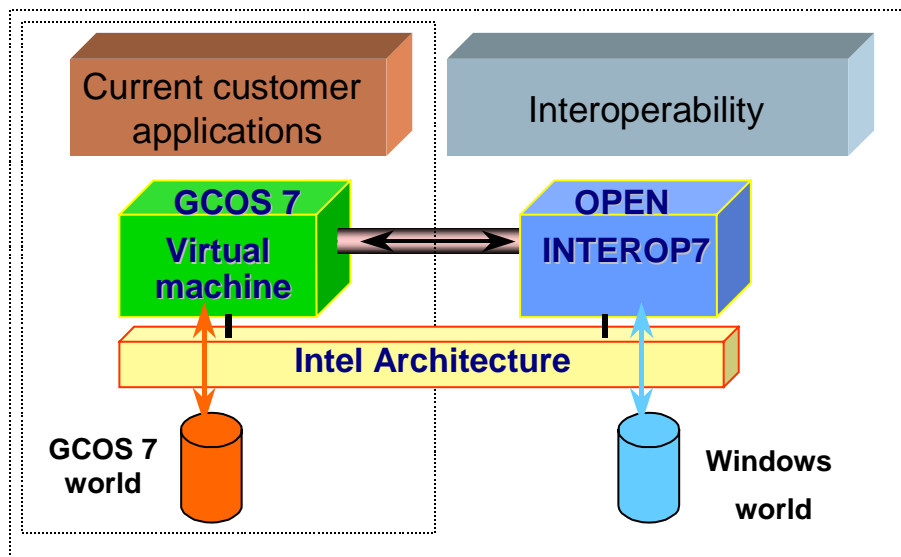


Figure 1-1. General Architecture

The general architecture can be also represented as follows:

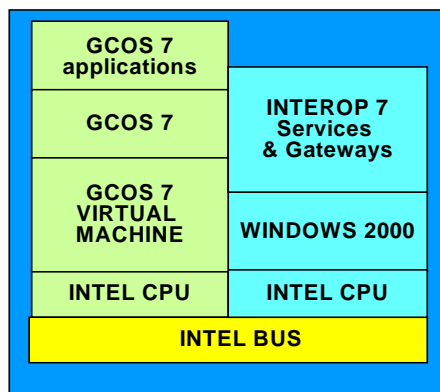


Figure 1-2. DPS 7000/XTA Main Software Components



1.2.2 Component Overview

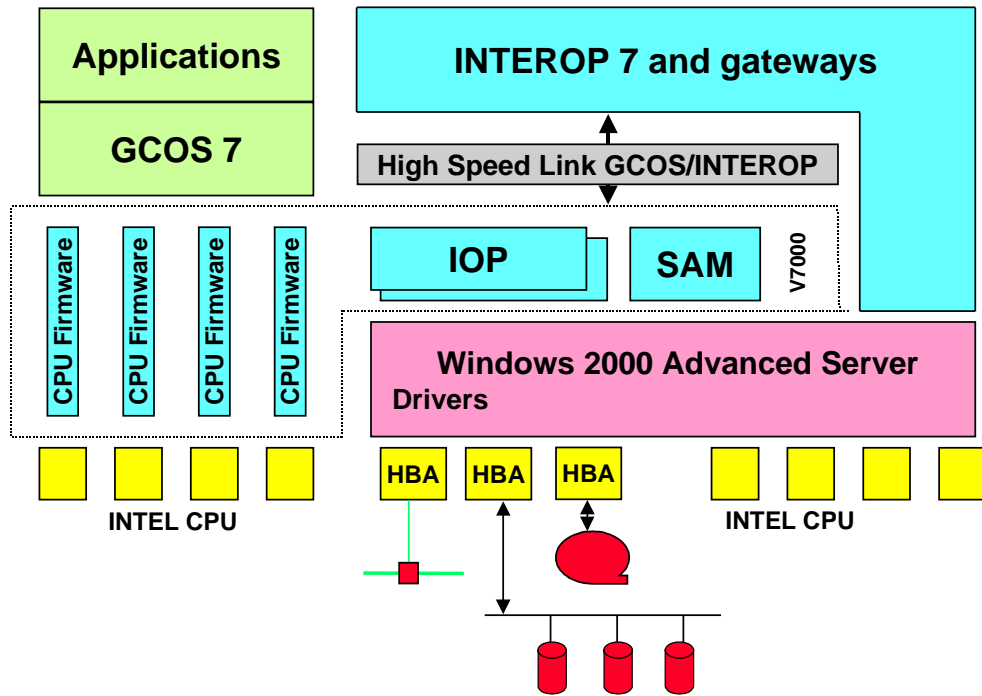


Figure 1-3. DPS 7000/XTA Hardware and Software Components





2. Reconnection of DPS 7000 Peripheral Subsystems on DPS 7000/XTA

2.1 General Information about Peripheral Subsystem Reconnection

2.1.1 Firmware, Software and Driver Versions

Hereafter, indications are given concerning the minimum versions recommended for micro-codes, BIOS, software modules or drivers. They are the versions that were available and selected as satisfactory at the time validation was done.

HW component (USB & PCI boards)	FW version	Driver name	Driver version
USB converter		usbhub.sys	depends on Windows SP
		edgeser.sys	1.11.5
Intel PRO 100+		e100bnt5.sys net.sys	
Adaptec SCSI HVD AHA2944UW		Aic78xx.sys	d2.23 or V2.20b
Emulex LP8000-D1 (copper) connection of DAS5300	BIOS = V1.51 FW = 3.90a7	port driver elxsl2.sys	V5-2.11a2
Emulex LP8000-N1 (multi-mode optical) connection of DAS4700	BIOS = V1.51 FW = 3.90a7	port driver elxsl2.sys	V5-2.11a2
Emulex LP8000-F1 (multi-mode optical) connection of CDA and galileo-FC	BIOS = V1.51 FW = 3.90a7	port driver elxsl2.sys	V5-2.11a2



Storage subsystem	FW version	Driver name	Driver version
DAS5300 (K1)	Flare 5.24.02 (PROM 2.09)		
DAS4700	Flare: 8.42.58 or 8.43.53 (PROM 5.94.00)		
CDA7 5330 and 5630 (Symmetrix 4.0 and 4.8)	FW level code mini: 5265.30.20		
CDA7 8430 (Symm 5)	FW level code mini: 5566.32.21S or 5567.25.13S		
galileo1	V4.0	2ai.sys	1.0.0.34
galileo2 SCSI	S4.i (single drive) M4.i (multiple)	2ai.sys	1.0.0.34

Because the storage equipments are installed at customer sites along the time, there may be discrepancies between the installed versions of components and the recommended versions that appear in the above arrays.

The recommended strategy is to update those components at the time a major maintenance intervention is required at a given customer site.

Storage SW Component	SW version
Navisphere	4.2.2 or 4.3.0 for DAS5300 5.2 mini for DAS4700
ATF	2.1.4.8
Powerpath	2.0.3

However, it must be understood that these versions will evolve along time. You will find a summary of the reference versions on the Web site dedicated to Maintenance people in a document that will be permanently updated.



2.1.2 List of DPS 7000/XTA Reconnectable Peripheral Subsystems

DISK Subsystems

Subsystem Model	Channel Interface	DPS 7000 Hardware Controller	GCOS7 External Device Type	Reconnectable ?
MSC4/A-B-N-S +FSD500	PSI-N/-S	PNM/PSM	MS/D500	NO
MSC4/BS + D1000	PSI-S	PSM	MS/B10	NO
MAXTOR 300	SCSI-1	MSM	MS/FSA	NO
MAXTOR 600	SCSI-1	MSM	MS/FSA	NO
LSS V1 / ELITE 1 1.5GB	SCSI-1	MSP	MS/FSA	NO
LSS V2 / ELITE 2 2.5GB	SCSI-1	MSP	MS/FSA	NO
LSS V5 / ATLAS 1 2.5GB	SCSI-1	MSP	MS/FSA	NO
SDA-7 5 GB-RAID 1	SCSI-2	WSP	MS/FSA	NO
SDA-7 11.5 GB-RAID 1	SCSI-2	WSP	MS/FSA	NO
FDA 7 11.5 GB-RAID 1	SCSI-2	WSP / FC	MS/FSA	YES
CDA-7 5130 5GB-RAID 1/RAID S	SCSI-2	WSP	MS/FSA	NO
CDA-7 5330 11.5GB-RAID 1 /RAIDS	SCSI-2	WSP	MS/FSA	YES
CDA-7 5330 23GB-RAID 1	SCSI-2	WSP	MS/FSA	YES
CDA-7 5630 23GB-RAID 1	SCSI-2	WSP	MS/FSA	YES
CDA-7 8430 36 GB-RAID 1 *	SCSI-2	WSP	MS/FSA	YES

*: formatted size

A more detailed information concerning the disk sizes is given in the following table.

Disk type (unformatted size)	Real formatted size (in 100KB units) 1KB == 1024 Bytes
LSS 1.6GB	13348
LSS 2.5GB	20770
SDA7 5GB	40528
SDA7 11.5GB	85635
FDA 7 11.5GB	84855
CDA 7 11.5GB	87890
CDA 7 23GB	2 times 87890 (split 2 CDA option)
CDA 7 47GB	4 times 87890 (split 4 CDA option)



REEL to REEL Tape Subsystems

Subsystem Model	Channel Interface	DPS 7000 Hardware Controller	GCOS7 External Device Type	Reconnectable ?
ATP + ALFA32	PSI-N	PNM	MT/T9[/D....]	NO
ATP + ALFA40	PSI-N	PNM	MT/T9[/D....]	NO
MTC-G + KEYSTONE-3	PSI-N	PNM	MT/T9[/D....]	NO
Power Exchange 9 (Galileo 1 +M4D-9914)	SCSI-1	MSP	CT/M6 (note2)	YES

8mm Cassettes

Subsystem Model	Channel Interface	DPS 7000 Hardware Controller	GCOS7 External Device Type	Reconnectable ?
Integrated Exabyte (8200)	SCSI-1	MSM	CT/M6	NO
Integrated Exabyte (8500/8505/8705)	SCSI-1	MSP	CT/M6	NO
Exb-10e	SCSI-1	MSP	CT/M6	NO

STAND ALONE Cartridge Drives

18 TRACKS 1/2" Cartridge Drives	Channel Interface	DPS 7000 Hardware Controller	GCOS7 External Device Type	Reconnectable ?
CMTS	PSI-S	PSM	CT/M5[/C]	NO
STK 4780	PSI-S + GPA	PSM	CT/M5[/C]	NO
STK 4280	SCSI-1	MSP	CT/M5[/C]	NO
Power Exchange 18/36 (Galileo 1 +L490E)	SCSI-1	MSP	CT/M6 (note 2)	YES

36 TRACKS 1/2" Cartridge Drives	Channel Interface	DPS 7000 Hardware Controller	GCOS7 External Device Type	Reconnectable ?
STK 4490 (Silverton)	PSI-S + GPA	PSM	CT/36T[/C]	NO
STK 9712 / STK 4890 (Twin Peaks)	SCSI-2	WSP	CT/36T[/C]	YES
Power Exchange 18/36 (Galileo 1 +L490E)	SCSI-1	MSP	CT/M6 (note 2)	YES



LIBRARY Cartridge Drives

18 TRACKS 1/2" Cartridge Drives	Channel Interface	DPS 7000 Hardware Controller	GCOS7 External Device Type	Reconnectable ?
STK 4410 (PowderHorn) + STK 4780	PSI-S + GPA	PSM	CT/LIB/M5[/C]	NO (Note1)
STK 9360 (WolfCreek) + STK 4780	PSI-S + GPA	PSM	CT/LIB/M5[/C]	NO (Note1)

36 TRACKS 1/2" Cartridge Drives	Channel Interface	DPS 7000 Hardware Controller	GCOS7 External Device Type	Reconnectable ?
STK 4410 (PowderHorn) + STK 4490	PSI-S + GPA	PSM	CT/LIB/36T[/C]	NO
STK 9360 (WolfCreek) + STK 4490	PSI-S + GPA	PSM	CT/LIB/36T[/C]	NO (Note 1)
STK 9710 (Timberwolf) + STK 4890	SCSI-2	WSP	CT/LIB/36T[/C]	YES
STK 4410 (PowderHorn) + STK 9490 (Timberline)	SCSI-2	WSP	CT/LIB/36T[/C]	NO
STK 9360 (WolfCreek) + STK 9490	SCSI-2	WSP	CT/LIB/36T[/C]	YES
STK 9740 (Timberwolf) + STK 9490	SCSI-2	WSP	CT/LIB/36T[/C]	YES

STK Library Server

DPX/20	NO
ESCALA-S100/E	YES
Estrella-133/340	YES



STAND ALONE DLT Cartridge Drives

DLT Cartridge Drives	Channel Interface	DPS 7000 Hardware Controller	GCOS7 External Device Type	Reconnectable ?
Powersave (DLT4000 drive)	SCSI-1	MSP	CT/M6 (note 2)	YES
Powersave with Auto loader (DLT4000 drive)	SCSI-1	MSP	CT/M6 (note 2)	YES
Powersave 8000 drive (one DLT8000 drive)	SCSI-1	MSP	CT/M6 (note 2)	YES
Powersave 8000 Loader (one DLT8000 drive, 10 cartridges)	SCSI-1	MSP	CT/M6 (note 2)	YES

LIBRARY DLT Cartridge Drives

DLT Cartridge Drives	Channel Interface	DPS 7000 Hardware Controller	GCOS7 External Device Type	Reconnectable ?
Opensave (Any configuration)	SCSI-1	MSP	CT/M6 (note 2)	YES

OPENSERVE Server

Estrella (note 3)	YES
ESCALA (note 3)	YES

NOTES:

1. The non-supported libraries may be updated with supported drives.
2. The CT/M6 device type is just a convention used to reconnect Galileo controllers on DPS 7000/XTA platforms.

Opensave connection is done through Telnet server and needs Telnetd installed on the Windows™ side of DPS 7000/XTA or on a separate AIX or Windows™ server.



Printers

Printer Model	Channel Interface	Hardware Controller	GCOS7 External Device Type	Reconnectable ?
PR54 (any version)	PDSI	MPC/PRM	PR/PR54	NO
PR88	PDSI	MPC/PRM	PR/PR88	NO
NIP (Non Impact Printer)	PDSI	MPC/PRM		NO
PR90	DPLL/Serial	CPM	PR/PR90	NO
PR800/900	DPLL/Serial	CPM	PR/PR90	YES
PR701/801/901	DPLL/Serial	CPM	PR/PR90	YES
PR702/802/902	DPLL/Serial	CPM	PR/PR90	YES
PR702A/802SA/902SA	DPLL/Serial	CPM	PR/PR90	YES
Mathilde printers	NETWORK	LAN	GTwriter	YES
Network printers	NETWORK	LAN	OpenGTwriter	YES

Telecoms

μFEP/IFEP/EFEP	NO
DATANET's (any version)	NO
FCP 7	NO
MAINWAY (only Mainway 2000 and 2600 series)	YES
ISL based on Ethernet 10 Mbits technology	YES
ISL based on FDDI 100 Mbits technology	NO



2.1.2.1 Subsystem Definitions Listed by Marketing Identifiers

The tables list only the MI's which are reconnectable on DPS 7000/XTA systems. The MI's correspond to the subsystem itself and the lists do not include all optional MI's. It is assumed that if a subsystem is reconnectable its options are also reconnectable.

CDA 7 disk subsystems

CDA 7 5330 Symmetrix 4.0

MSPD038-0000	CDA 7 46GB R1
MSPD039-0000	CDA 7 92GB R1
MSPD040-0000	CDA 7 138GB R1
MSPD041-0000	CDA 7 184GB R1
MSPD042-0000	CDA 7 69GB RAID-S
MSPD043-0000	CDA 7 138GB RAID-S
MSPD044-0000	CDA 7 207GB RAID-S
MSPD045-0000	CDA 7 276GB RAID-S

CDA 7 5630 Symmetrix 4.8

MSPD056-0000	CDA7/5630/2HC/M1024/46R1
MSPD057-0000	CDA7/5630/2HC/M2048/46R1
MSPD058-0000	CDA7/5630/2HC/M4096/46R1
MSPD059-0000	CDA7/5630/4HC/M1024/138R1
MSPD060-0000	CDA7/5630/4HC/M2048/138R1
MSPD061-0000	CDA7/5630/4HC/M4096/138R1
MSPD062-0000	CDA7/5630/6HC/M2048/230R1
MSPD063-0000	CDA7/5630/8HC/M2048/322R1
MSPD064-0000	CDA7/5630/8HC/M2048/368R1

CDA 7 8430 Symmetrix 5.0

MSPD071-0000	CDA7/8430-36 Frame
MSPD072-0000	CDA7/8430-73 Frame



FDA 7 Disk subsystems

MSPD065-0000	FDA7/ DI/ 46 GB R1
MSPD066-0000	FDA7/ DI/ 92 GB R1
MSPD067-0000	FDA7/ DI/ 69 GB R1
MSPD068-0000	FDA7/ HA/ 46 GB R1
MSPD069-0000	FDA7/HA/ 92 GB R1
MSPD070-0000	FDA7/HA/ 80.5 GB R1

Printers

PRUD003-0000	PR900S Matrix PRT & stacker
PRUD002-0000	PR800S Matrix PRT & stacker
PRUG004-0000	PR701 Matrix PRT w/o stacker
PRUG007-0000	PR901S Matrix PRT & stacker
PRUG008-0000	PR801S Matrix PRT & stacker
PRUD004-0000	PR702 Matrix PRT w/o stacker
PRUD007-0000	PR902S Matrix PRT & stacker
PRUD008-0000	PR802S Matrix PRT & stacker
PRUD004-000A	PR702A Matrix PRT w/o stacker
PRUD007-000A	PR902SA Matrix PRT & stacker
PRUD008-000A	PR802SA Matrix PRT & stacker



Tapes and Cartridges

CTSD030-0100	CTL9712 + 1 WSP
CTSD030-0200	CTL9712
CTSD032-0100	CTS4890 drive for CTL9710 + 1 WSP
CTSD032-0200	CTS4890 drive for CTL9710
CTSD033-0100	Powersave DLT drive + 1 MSP
CTSD033-0200	Powersave DLT drive
CTSD034-0100	Powersave DLT Auto loader drive + 1 MSP controller
CTSD034-0200	Powersave DLT Auto loader drive
CTSD037-0x00	Powersave 8000 drive (x = 1 or 2)
CTSD038-0x00	Powersave 8000 loader (x = 1 or 2)
CTSD035-0100	PowerExchange 9 + 1 MSP
CTSD035-0200	PowerExchange 9
CTSD036-0100	PowerExchange 18/36 + 1 MSP
CTSD036-0200	PowerExchange 18/36
CTCD001-Q200	Timberline: M32 TimberLine with two transports (CTU)
CTCD001-Q400	Timberline: M34 TimberLine with four transports (CTU)
CTCD003-Q200	Opensave: 2 Streamline 7 (2 Galileo + MSP)



2.1.3 PCI Slots Allocation

The PCI slot numbers to be used for adapters depend on the type of XTA system. Hereafter are several matrix that summarize the conventions that have been defined.

For XTAx0 series:

		PCI slot number :	1	2	3	4	5	6	7	8
Rank			Priorities							
A	LAN mono	MainWay/Network	1	2						
B	LAN Dual	MainWay/Network		1			2			
C	SCSI HVD	Tape, Libraries & CDA7 /SCSI					4	3	2	1
D	Emulex D1	DAS53x0 /Fiber Channel Copper			1	2				
E	Emulex N1	DAS4700 /Fiber Channel GBIC			1	2				
F	Emulex F1	CDA7 8x30 /Fiber Channel Optical			1	2				
G	Emulex F1	Tape & Libraries /Fiber Channel Optical					1	2	3	4

Forbidden



For XTA1x0 series:

		PCI slot numbers :	1	2	3	4	5	6	7	8	9	10
Rank			Priorities									
A	LAN mono	MainWay/Network	1	2	3							
B	LAN Dual	MainWay/Network	1	2								
C	Emulex F1	CDA7 8x30 /Fiber Channel Optical							4	3	2	1
D	Emulex D1	DAS53x0 /Fiber Channel Cu							4	3	2	1
E	Emulex N1	DAS4700 /Fiber Channel Opto GBIC							4	3	2	1
F	Emulex F1	Tape & Libairies /Fiber Channel Optical					1	2	3	4		
G	SCSI HVD	Tape, Libairies & CDA7 /SCSI				1	2	3				

Base configuration
 Forbidden



2.2 Disk Subsystem Reconnection

2.2.1 General Information about Disk Reconnection

The disk format is not the same for a DPS 7000 old platform and for a DPS 7000/XTA platform. Even if the physical disk subsystem reconnection is possible, the "old" data **cannot** be read by the DPS 7000/XTA disk driver. **Therefore a data migration is mandatory** to allow the recognition of the GCOS7 volumes and files by the DPS 7000/XTA file system management.



IMPORTANT:

The disk volume or file saving operation has to be done before the physical subsystem reconnection is performed on the DPS 7000/XTA platform.

The save operation has to be checked carefully because the disk subsystem will be reformatted during the DPS 7000/XTA reconnection and **the original data will be lost.**

To avoid this case we strongly recommend that the volumes or files are saved at least twice, on two separate media.

The only valid copy of the customer data will be saved only on tape/cartridge media.

2.2.2 FDA 7 Subsystem Reconnection

The FDA 7 subsystem on the DPS 7000 is composed of:

- A connection cabinet containing:
 - Power system (1 or 2 UPS modules)
 - two or four SCSI to FC converters (Crossroads models 4100 or 4150)
 - a six positions switch and a NT laptop for maintenance and administration.
- A DAS subsystem (CLARiiON 5300 model) always configured in RAID1 mode and with a 16 disk units maximum configuration.
- Administration and maintenance software installed on the integrated laptop:
 - a remote connection software (NetOp) to allow remote support center to access to Laptop services
 - an administration & maintenance software for DAS subsystem (Navisphere).

Only the DAS part is reconnected to the DPS 7000/XTA platform directly to native Fiber Channel HBA. The selected Host Bus Adapter (HBA) is the copper fiber channel PCI board **Emulex LP8000-D1** and following.



2.2.2.1 General Rules for DAS Connection on DPS 7000/XTA

A DAS subsystem (such as a DAS 53xx CLARiiON subsystem) is configured either as a Data Integrity configuration (DI) or a high availability configuration (HA).

The way these two configurations are connected on the DPS 7000/XTA system is illustrated in the following figures.

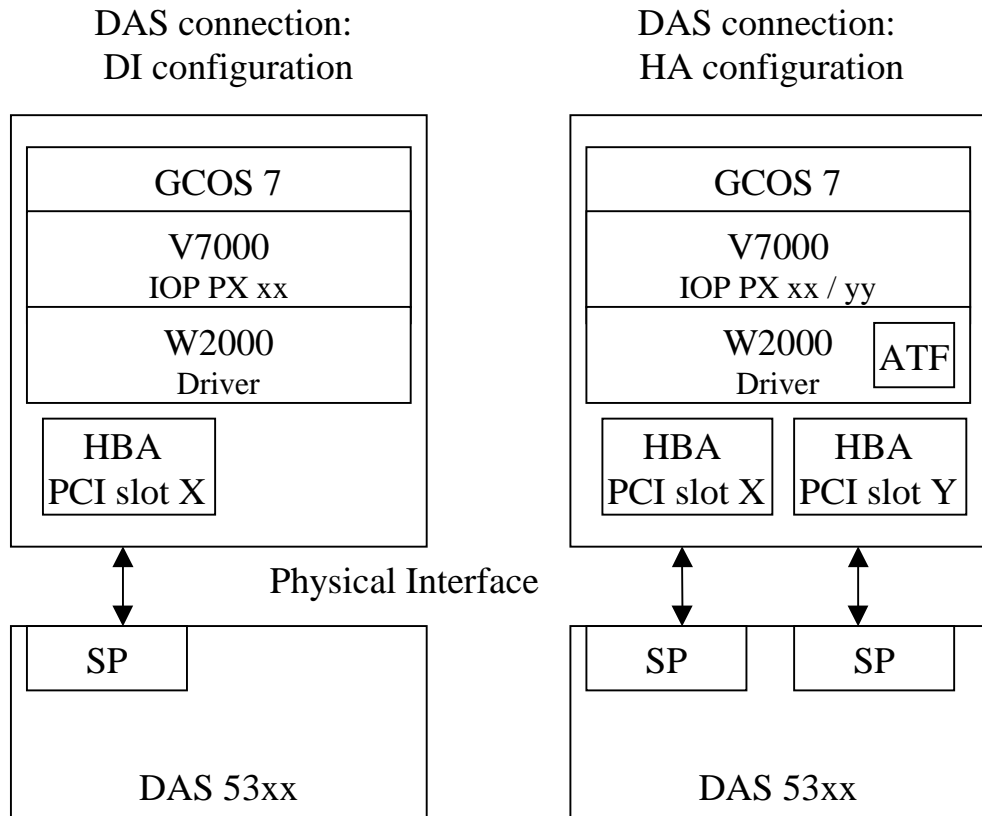


Figure 2-1. DAS Connection on DPS 7000 XTA

As you can see in the above figure, one HBA (PCI board) is connected to one Storage Processor (SP). The technology used for this connection is a copper link.

Note that the PCI slots X and Y to be used depend on the type of XTA system (refer to section 2.1.3).



The different phases for reconnecting (or connecting) a DAS subsystem on a DPS 7000/XTA are:

- Prerequisites:
 - DAS5300 is present and powered-on (after checking and setting switches):
Enclosure address switches:
 - IDAE address is 0
 - DAE (if present) is 1.FC-AL SP addresses:
 - SP-A should be 00
 - SP-B should be 01 (0 on 0-7, 1 on 0-F).
 - LP8000-D1 HBA's are installed in the right PCI slots, according to the type of XTA system (see above).
Caution: you have to note the IEEE addresses of each HBA and its serial number. This address is mandatory to retrieve the World Wide Name (WWN).
Check also the jumpers on the first board:
Default device ID F800:
Strap 2 and 3 on the JX1 block
Strap 1 and 2 on the JX2 block.
 - Physical cables are installed between LP8000-D1 and DAS storage processor (copper link).
 - LP8000-D1 Firmware and driver are installed on the W2000 side.
 - LP8000-D1 configuration is done.
- Check that the DAS subsystem is known from Windows™ 2000.
- Check that Navisphere Supervisor and Navisphere Agent, ATF (HA configuration) are installed.

NOTE:

When using ATF, the LUNs seen by XTA should be defined splitted between SP0 and SP1 (it is recommended to equally allocate half the number of LUNs to each SP in order to maximize the global throughput).

To know the recommended versions of ATF and Navisphere, please refer to section 2.1.1.

The installation of Navisphere elements and ATF must be performed according to the following sequence :

- First Navisphere Supervisor
- Then ATF
- Last Navisphere Agent



- Start Navisphere agent and check if DAS storage processors (SPA and if present SPB) are accessible.
- Set up the proper disk configuration on DAS5300 (Raid groups, LUN bindings, cache configuration ...).
- Set up “basic” to “dynamic” volumes and signatures.
- Create W2000 folders with GCOS7 volumes (refer to V7000 Configuration & Maintenance Guide).
- Configure IOP's and Paths on V7000 configuration. Check and activate this configuration.
- Reinitialize GCOS7 (restore, restart cold, run config job then Reload GCOS7 and enter again Restore restart cold at IL01 question).
- GCOS7 volumes are seen as NSTD, VOLPREP (short) the GCOS7 volumes.
- Check the access to the volumes (with TMSS for example).
- If HA configuration is installed, test the simulated Trespass and Restore commands with ATF.
- Install the GCOS7 system disks (BKST, resident, ...) and user volumes on the DAS subsystem.

2.2.2.2 DAS Firmware

To know the recommended versions of PROM and Flare, please refer to section 2.1.1.

These two components cannot be delivered separately.

2.2.2.3 Hardware / Firmware Reconnection Kit Definition

FC Cables

Reference: ECCQ002-200 (10 meters length)

The FC cables are the same as the ones used in the DPS 7000 configuration (cables between connection cabinet and DAS).

Only one cable is used on DI configuration and two on the HA configuration (while two and four are respectively used on the current FDA 7).

We recommend to keep the unused cables on site. They could be useful for spare parts.



DPS 7000/XTA HBA Controller

- Emulex LP8000-D1 (Copper interface).
Marketing Reference is: CSKD003-0000 (DI reconnection) CSKD004-0000 (to be added to CSKD003-0000 for HA reconnection).
Spare part reference (FRU) is: FC1020019-03.
- To know the recommended versions of BIOS and firmware, please refer to section 2.1.1. They can be upgraded using the elxcfg utility.

Subsystem firmware migration

If DAS Flare and prom firmware are not at the minimum level required, they have to be updated before disconnecting the FDA 7 from the DPS 7000 system using DPS 7000 procedures (through NT laptop).

DAS configuration

The DAS configuration is not changed. It will be used with the same characteristics as on DPS 7000 (RAID1 mode, one or two SP's, read and write cache definition, ...).

Unbind and bind to take benefit of the full disk size (Last 9GB FDA 7 disk generation).

The disks units will have to be reconfigured to comply with the W2000 file system format.



CAUTION:

These operations destruct the contents of all disks.



2.2.2.4 Software Components

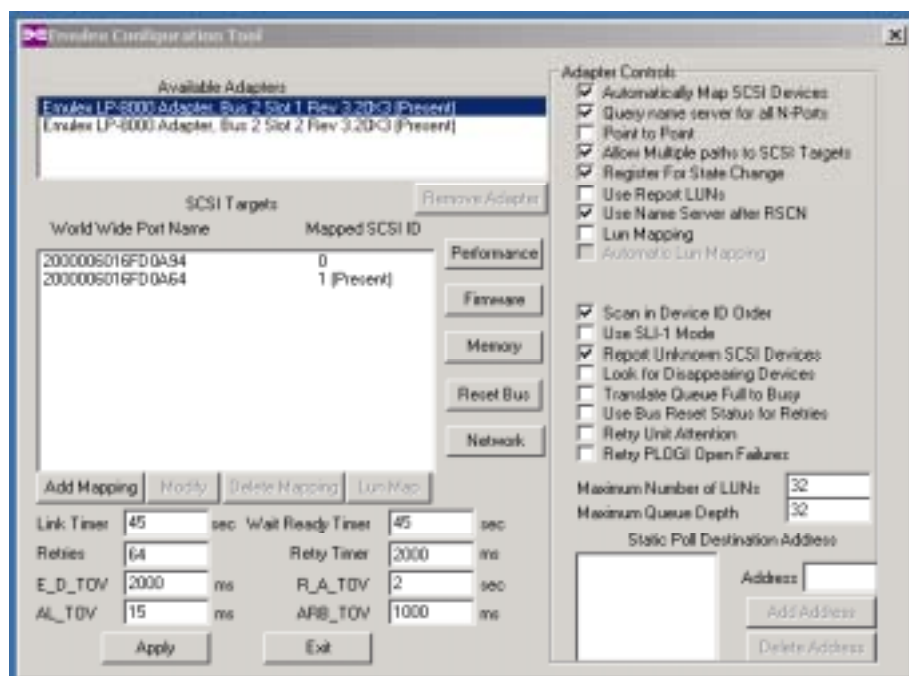
DPS 7000/XTA driver

The driver used is the Emulex VHQL Signed Fiber Channel Port driver (see section 2.1.1).

This driver is automatically factory installed with the V7000 software.

Configuration and parameters

To set-up the LP8000-D1 parameters, the specific utility elxcfdas is used. See an example hereafter.



2.2.2.5 Administration and Maintenance Tools

Local access

The installation of LP8000 BIOS and firmware is done by a specific utility: `lputilnt.exe`. This utility is installed at the same time as the driver and is accessible in the directory: `C:\winnt\system32`.



The DAS administration is done using Navisphere software (from EMC² CLARiiON).

The Navisphere agent is installed on the DPS 7000/XTA platform (W2000 part). The Navisphere Supervisor can run on a separate workstation. It is recommended to use the Bull maintenance station (TM1200/TM1300) for that purpose.

The High Availability function (HA configuration) is performed by a specific software installed on WindowsTM 2000: ATF.

This software is optional (not used for DI configuration).

- Navisphere Supervisor is to be installed first
- ATF (if any) should be installed before Navisphere Agent
- Navisphere Agent is to be installed last
- After ATF has been installed, W2000 must be rebooted to activate ATF
- To verify the HBA driver, and ATF connections to the SP's start the Navisphere Agent Configurator:
Start -> Program -> Navisphere -> Agent Configurator

Then select the menu option:

Devices -> Auto Detect

Then look in the Device table for:

\\.\atf_sp0a for SPA

\\.\atf_sp0b for SPB

- Check Navisphere status ATF window is "Running" state.
- To test ATF by simulating Trespass and Restore functions, the following utilities are to be used, launched as a DOS command

```
atf_trespass atf_sp0 1:2 ( * )
```

```
atf_restore
```

Remote access

The remote maintenance access to DAS uses the tools defined for the DPS 7000/XTA itself (Terminal Server).

* Sp0 designates the first DAS5300 subsystem and not SPA.

1. argument for SPA
2. argument for SPB



2.2.3 CDA 7 Subsystem Reconnection

The CDA 7 reconnection (any model) may be done using 2 principles:

- Current DPS 7000 connection: SCSI interface.
- Fiber Channel connection.

The CDA 7 reconnection is only possible on a case by case basis (no standard MI is available to define the hardware reconnection kit).

Information below is a general information. The CDA 7 reconnection kit will be analyzed during the presale period of the DPS 7000/XTA commercial proposal.

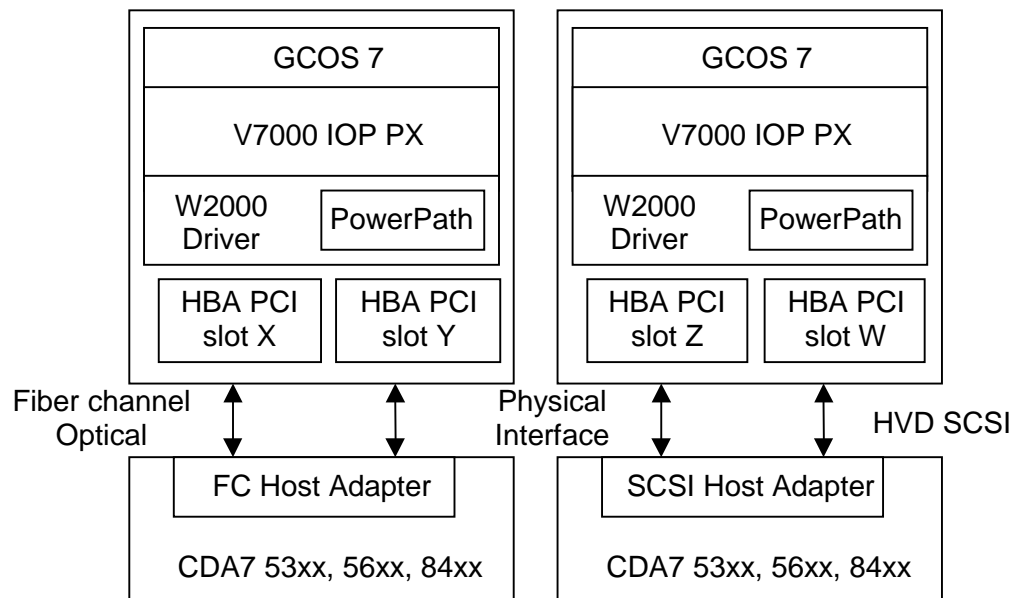


Figure 2-2. CDA 7 Connection on DPS 7000/XTA

Note that the PCI slots to be used depend on the type of XTA system (see section 2.1.3).

- The FC channel used on EMC² host adapters is the optical technology (not the copper technology as on FDA 7). The selected PCI controller is:
- Emulex LP8000-F1 (MULTI MODE OPTICAL INTERFACE) and following.

The SCSI interface technology is a SCSI-2 HVD technology. The selected PCI controller is:

- Adaptec AHA-2944 UW.

NOTE:

The number of 32 bits PCI's slots usable for such controllers is limited: four on current DPS 7000/XTA platforms.



2.2.3.1 Minimum Hardware and Firmware TS Allowing Reconnection

To know the recommended versions of firmware, please refer to section 2.1.1.

2.2.3.2 Hardware / Firmware Reconnection Kit Definition

Cables References

SCSI cable:

CBLG157-1900 (12 meters length)

CBLG157-2000 (20 meters length)

Optical FC cable:

FOCF001-M015 (15 meters length)

FOCF001-M030 (30 meters length)

FOCF001-M050 (50 meters length)

FOCF001-M200 (200 meters length)

FOCF001-M500 (500 meters length)

EMC² FC Host Adapter Reference

2 x Emulex LP8000-F1: CSKD005-0000

(note: only in case of non SCSI reconnection)

Emulex LP8000-F1 Spare part reference is FC1020016-02

DPS 7000/XTA Controller

SCSI reconnection: Adaptec AHA-2944 UW.

Marketing reference is: AIF-0586-00-00.

Spare part reference (FRU) is: 1301630000.

To know the recommended versions of BIOS and firmware, please refer to section 2.1.1.

Subsystem firmware migration – Configuration file

The configuration file is also called BINFILE.

The Binfile has to be modified (TAC/BIIC operation) to take into account the new connection parameters (FC connection) and the new subsystem configuration.

Even if the reconnection is possible in SCSI mode, the server connection has to be optimized to limit the number of SCSI PCI boards used.

Microcode

The microcode has to be updated (TAC/BIIC operation) to take benefit of new microcode version. (this simplifies the CDA 7 park management).



NOTE:

If the new microcode level is greater than or equal to 5x66, it will imply an update of the CDA 7 laptop (update or exchange). This particular point has to be worked with TAC/BIIC people.

2.2.3.3 Software Components

DPS 7000/XTA driver

The standard W2000 SCSI disk driver is used.

In addition, the appropriate board driver is used depending on the type of connection (aix78xx.sys for SCSI connections or Emulex driver for Fiber Channel connections): refer to section 2.1.1.

Configuration and parameters

The CDA 7 is always connected through two physical accesses. A specific software, PowerPath, is mandatory to manage the load balancing and the redundancy.

NOTE:

For CDA7 4.0 or 4.8, in the CDA7 configuration binfile, the D bit (DisableQueueReset on unit attention) should be enabled on the related SA's.

2.2.3.4 Administration and Maintenance Tools

Local access

The CDA 7 is maintained and administered by a separate laptop included in the CDA 7 cabinet.

Hardware and software of this product are EMC² proprietary and should not change when reconnecting a CDA 7 from DPS 7000 to DPS 7000/XTA.

Remote access

The CDA 7 is also equipped for remote maintenance access. The access is done through the laptop and an external modem. This connection doesn't change when reconnecting the CDA 7 from DPS 7000 to DPS 7000/XTA.



2.3 Tape / Cartridge Subsystem Reconnection

2.3.1 General Information about Tape or Cartridge Reconnection

2.3.1.1 Principle

The Data Format on tape or cartridge is the same (from the structure standpoint) on the DPS 7000 and on the DPS 7000/XTA platforms. The DPS 7000/XTA driver will then be able to read any tape or cartridge written on the DPS 7000 platform.

All tape / cartridge drive reconnections are done using a Galileo box and a specific Windows™ driver (2ai.sys from 2AI).

Several objects introduced before 2001 are already based on Galileo 1 architecture. They are: PowerSave (with or without loader) equipped with DLT4000 or DLT8000, PowerExchange9 and PowerExchange 18/36. Their reconnection is possible without any change.

Several types of Galileo controllers exist:

- Galileo 1 which supports only one drive, with an host interface based on the SCSI narrow High Voltage Differential (Fast SCSI HVD) interface. Maximum throughput is 10 MB/s.
- Galileo 2 which supports up to 2 drives (but only one drive if it is DLT8000), with an host interface based on the Ultra wide SCSI HVD interface. Maximum throughput is 40 MB/s. Two types of galileo 2 HVD exist:
 - with firmware “S”, dedicated to the connection of PowerSave and PowerExchange,
 - with firmware “M”, dedicated to the reconnection of ½ inch tape cartridge drives Twinpeaks or Timberline.
- Galileo 2-FC which enables Fiber Channel connections towards Diane (host interface) while keeping Ultra wide SCSI HVD interface towards the drives.

On the same SCSI HVD Interface, up to two Galileo 1 or 2 can be connected.

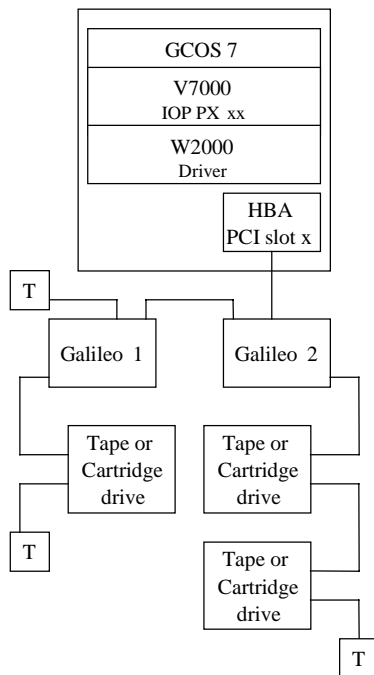


Figure 2-3. General Rules for Tape and Cartridge Reconnection



2.3.1.2 Galileo1 Reconnections

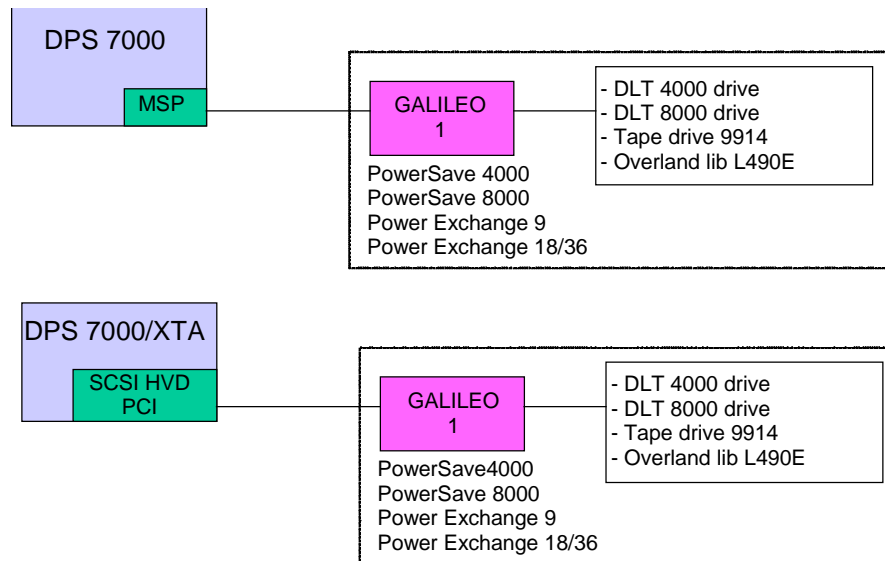


Figure 2-4. General Rules for PowerSave 4000, PowerSave 8000, PowerExchange 9 & 18/36 Reconnection

The Galileo 1 controller manages only one drive (SCSI HVD interface).

The SCSI HVD PCI supports up to two Galileo controllers (Galileo 1 or 2).

The Dual SCSI port on MSPD controller for DPS 7000 platform is replaced by a mono port SCSI HVD PCI board on DPS 7000/XTA platform.

NOTE:

The number of 32 bits PCI slots is currently limited to four on DPS 7000/XTA platforms.

The rules defined for the allocation of boards to PCI slots can be found in section 2.1.3.

If SCSI disk subsystems are reconnected (CDA 7), the highest priority is given to disks.

To support the DPS 7000 configuration (1 MSPD board) with the same number of boards on DPS 7000/XTA, two Galileo controllers can be connected in daisy chain at SCSI level.



2.3.1.3 Reconnection of Twinpeaks and Timberline

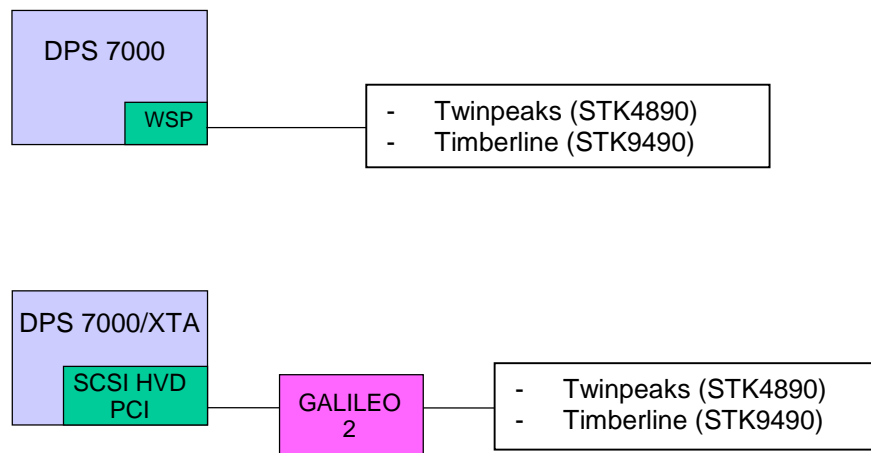


Figure 2-5. General Rules for Twinpeaks and Timberline Reconnection

They can be reconnected on XTA systems via galileo 2.

The Galileo 2 controllers will be connected to an HVD SCSI interface. Up to two Galileo 2 controllers can be connected to the same HVD SCSI bus.

The Galileo 2 controller is able to manage up to two drives (always a SCSI HVD Bus).

2.3.1.4 Common Information for All Tapes / Cartridges Reconnections

DPS 7000/XTA Controller

The PCI controller is an **Adaptec AHA 2944 UW** model.

Marketing reference is: AIF-0586-00-00.

Spare part reference (FRU) is: 1301630000.

To know the recommended versions of firmware, please refer to section 2.1.1.

Subsystem firmware migration



Software Components

DPS 7000/XTA driver

Two drivers are used:

- The Adaptec driver for the HBA, delivered with the V7000 CD-ROM file Aic78xx.sys.
- The driver for Galileo, delivered with the V7000 CD-ROM file 2ai.sys.

Configuration and parameters

Reboot the Server, type “CTRL A” upon request from the Adaptec AHA-2944UW HBA, then follows the indications of the configuration menu, setting up the following values :

Basic Host Adapter :	
Host Adapter SCSI ID	7
SCSI Parity Checking	Enabled
Host Adapter SCSI Termination	Automatic
Boot Device Configuration :	
Boot SCSI ID	0
Boot LUN Number	0
SCSI Device Configuration (0-15) :	
Sync Transfer Rate (MB/sec)	20 MB/s (Galileo 1) 40 MB/s (Galileo 2)
Initiate Wide Negotiation	Yes (Enabled)
Enable Disconnection	Yes (Enabled)
Send Start Unit SCSI Command	No (Disabled)
Enable Write Back cache	N/C
BIOS Multiple LUN Support	No (Disabled)
Include in BIOS Scan	Yes (Enabled)
Advanced Configuration options :	
Reset SCSI Bus at IC Initialization	Enabled
Display <Ctrl-A> Message During BIOS Initialization	Enabled
Extended BIOS Translation for DOS Drives > 1 GB	Enabled
Verbose/silent mode	Verbose
Host Adapter BIOS	Disabled : NOT scan
Support Removable Disks under BIOS as Fixed Disks	Boot Only
BIOS Support for Bootable CD-ROM	Disable: scan bus
BIOS Support for Int 13 Extensions	Enabled



Admin and Maintenance Tools

Galileo FW technical state:

The minimum version of Galileo FW is:

- **V4.0** and up for Galileo 1 controller
- **S4.0** and up for Galileo 2 controller supporting only one drive (S as single drive).
- **M4.0** and up for Galileo 2 controller supporting two drives (M as multiple drives).

To know the recommended versions of firmware, please refer to section 2.1.1.

If a Galileo firmware update is mandatory, use the normal DPS 7000 procedure to install the new firmware using a laptop connected to the serial input of the Galileo.

Local access

No specific administration tools for Galileo controllers.

Only a laptop is mandatory to install a new firmware version.

Remote access

No remote access: firmware evolution is an on site operation (with a laptop used as a tool).



2.3.2 Power Exchange 9 - 9914 Drive Reconnection

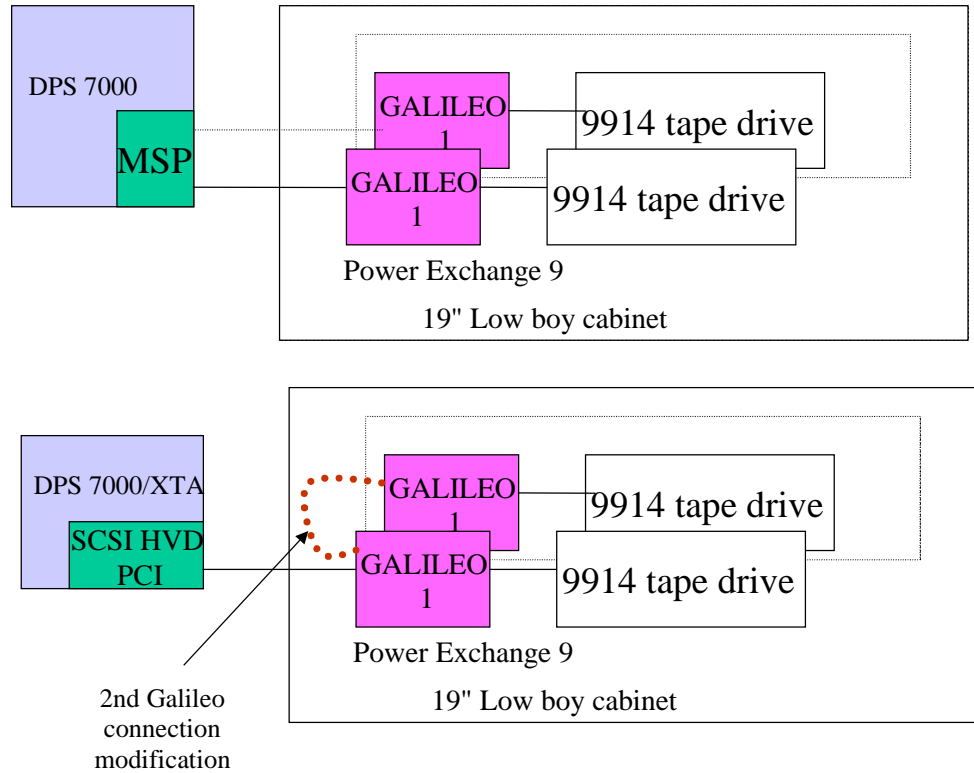
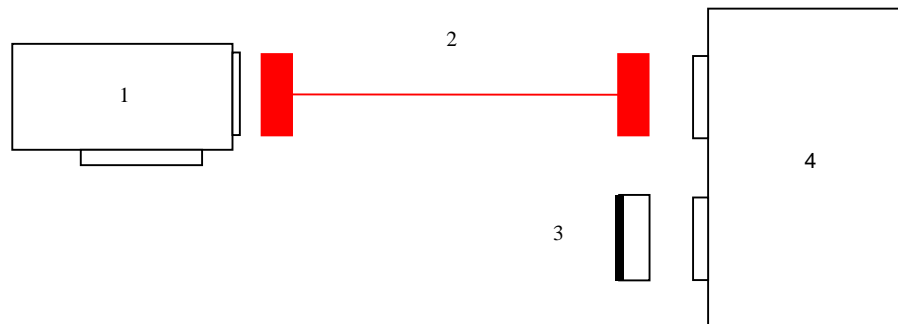


Figure 2-6. Power Exchange 9 - 9914 Drive Reconnection

Hardware / Firmware Reconnection Kit Definition





Item	Description	Comments	Reference	QTY
1	SCSI HVD SCSI Board	Output connector: Micro D68F	AHA2944 UW FRU: 1301630000	1
2	SCSI Cable 10m	Micro D68M/D68M	90676007-002	1
3	SCSI Terminator	Micro D68M differential	Already on site	1
4	Power Exchange 9	Input connector: Micro D68F differential	Already on site	1

In case of a second Power Exchange connection on the same SCSI board, the terminator 3 is replaced by a short cable (1 m) to connect the second drive and the terminator is placed on this second drive.

The reference of this cable is:

	SCSI Cable 1,3m	Micro D68M/D68M	90676009-001	1
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2.3.3 Stand Alone 18/ 36 tracks 1/2 " Cartridge Drive Reconnection

2.3.3.1 Power Exchange 18/36 (Based on L490E Autoloader)

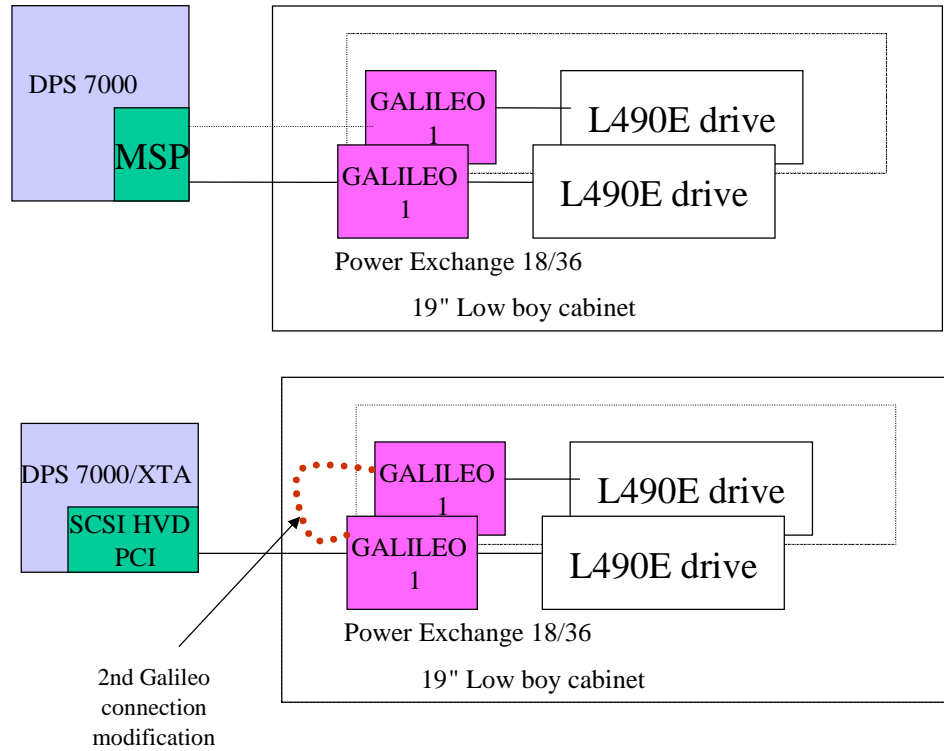
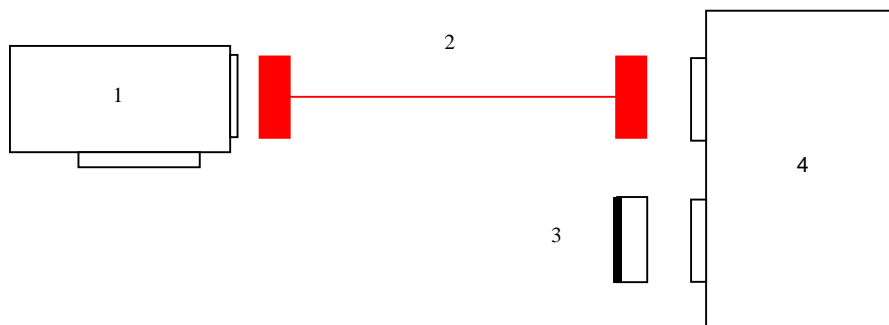


Figure 2-7. Power Exchange 18/36



Hardware Reconnection Kit Definition



Item	Description	Comments	Reference	QTY
1	SCSI HVD SCSI Board	Output connector: Micro D68F	AHA2944 UW FRU: 1301630000	1
2	SCSI Cable 10m	Micro D68M/D68M	90676007-002	1
3	SCSI Terminator	Micro D68M differential	Already on site	1
4	Power Exchange 18/36	Input connector: Micro D68F differential	Already on site	1

In case of a second Power Exchange connection on the same SCSI board, the terminator 3 is replaced by a short cable (1 m) to connect the second drive and the terminator is placed on this second drive.

The reference of this cable is:

	SCSI Cable 1,3m	Micro D68M/D68M	90676009-001	1
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2.3.3.2 STK9712 Autoloader Device

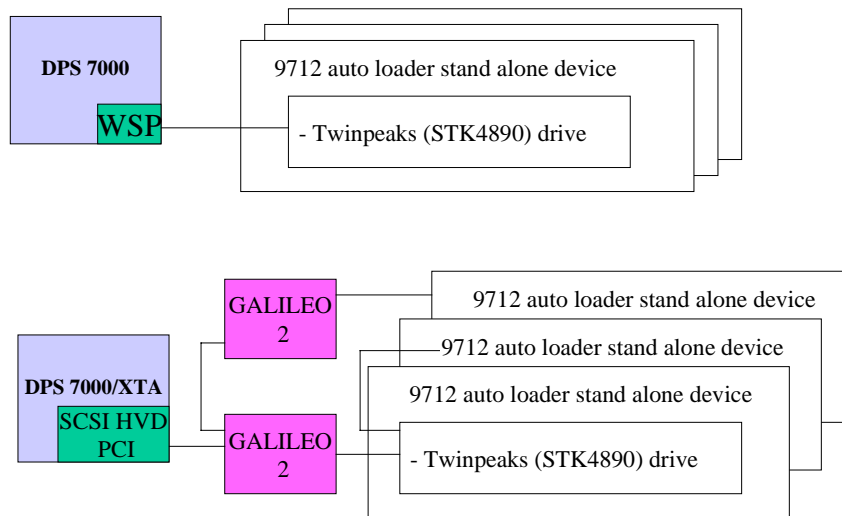


Figure 2-8. STK9712 reconnection on DPS7000/XTA

Up to three STK9712 can be connected (daisy chain) on the same WSP controller.

Two Galileo 2 controllers are needed to reconnect the maximum configuration of one WSP controller.

One to support the two first drives and the other to support the third one.

Two (2) 9712 auto loader devices can be connected on the Galileo 2 controller (with a daisy chain connection). The Galileo 2 is connected to a single SCSI HVD PCI controller.

STK9712 Minimum Technical Status

The FCO XPAF-87001 has to be applied before STK9712 reconnection. Contact GCOS7 support to get more information.

The minimum firmware level of the STK4890 drive is 2.08.

To update the drive firmware use the current DPS 7000 procedure (via a laptop).

Normally these technical statuses are not impacted by the DPS 7000/XTA reconnection, but if new firmware codes have been qualified, it may be important to update devices at reconnection time (park management facility).



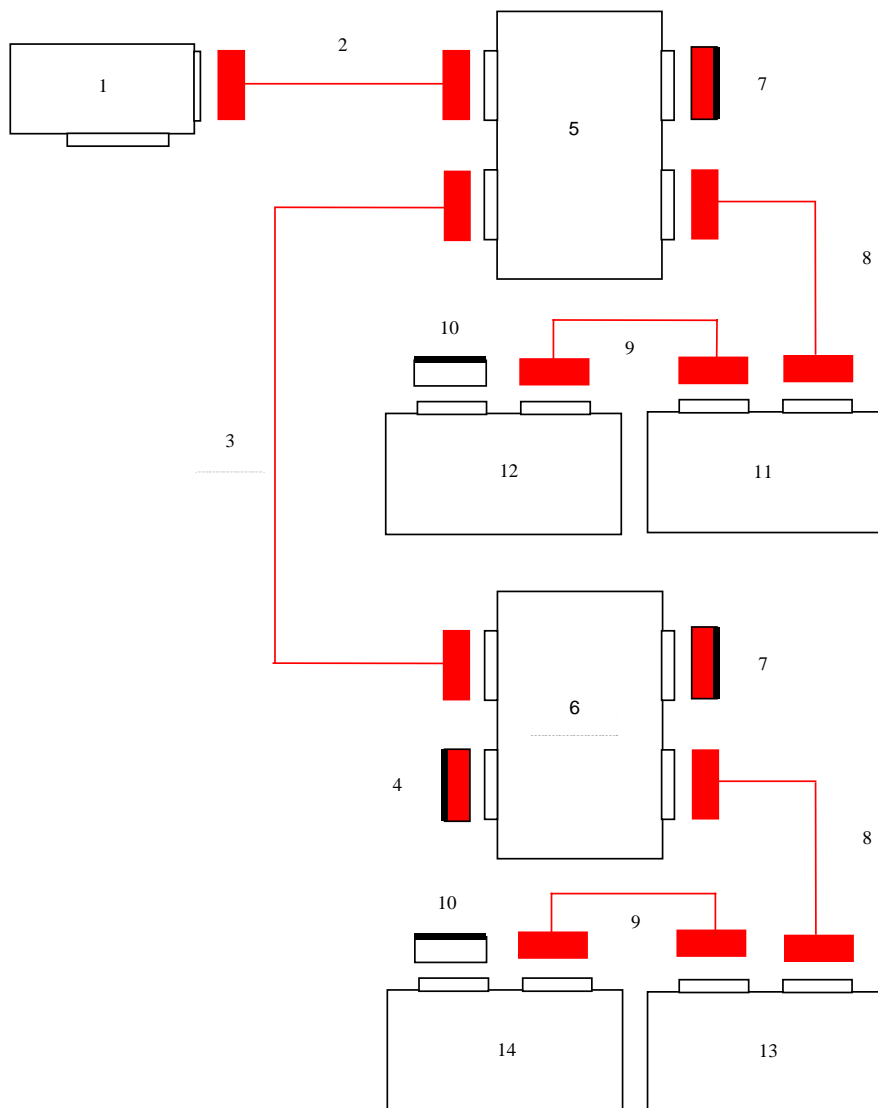
Hardware Reconnection Kit Definition

Galileo 2 controller

The reconnection is done through a Galileo 2 controller. This controller is not on site, therefore it has to be included in the reconnection kit.

The final packaging of the Galileo 2 controller is a table top device.

The figure below shows the reconnection of 4 STK9712 drives using two Galileo 2 controllers, as well as the reconnection kits.





Example of a kit to connect four Twinpeaks using two Galileo 2 controllers:

Item	Description	Comments	reference	QTY
1	SCSI HVD SCSI Board	Output connector: Micro D68F	AHA2944 UW FRU: 1301630000	1
2	SCSI Cable 6 m	Micro D68M/D68M	90676003-002	1
3	SCSI Cable 0.5 m	Micro D68M/D68M	90676010-001	1
4,7, 10	SCSI Terminator	Micro D68M differential	90054001-001	1
5, 6	Table top kit + Galileo2	Input connector: MicroD68F	2AI 437-000079	1 or 2
8	SCSI cable 10 m	Micro D68M/D68M	90676007-002	x
9	SCSI Cable 3 m	Micro D68M/D68M	Already on site	x
10, 11, 12, 13	Twinpeaks (STK4890)	Input connector: MicroD68F	Already on site	x

Drive parameters

The table below shows the configuration parameters for the Twinpeaks drive (STK4890).

Parameter	Value
Drv ID	2 (SCSI ID for drive #1)
	3 (SCSI ID for drive #2)
DrvLUN	0
LibLUN	1
Emul'n	M4 DATA
ErrRec	1
RdOppR	0
ICRC	1
ErrLog	0
StpWrt	0
RptAsy	1
FrcWrt	0
StpRdA	2
SCSI0	0
SCSI1	0
SCSI2	1
SCSIIn	0
ClnInt	30
FrcUnl	0
DisTrc	0
WrtFormat	36 Trk
DisChk	0
LdTime	0



2.3.4 Library Cartridge Drives

2.3.4.1 Principle

The cartridge library reconnection on DPS 7000/XTA systems implies:

- The drives reconnections:
Only SCSI drives are reconnectable through Galileo 2 controllers (see §2.3.1 to get general information).
Opensave library is reconnected using the already existing Galileo 1 controllers.
- The library server reconnection:
For ACSLS servers see §2.3.5
For Opensave servers see §2.3.8
- The Library itself (robot), which is not directly impacted by the evolution but may need a firmware update to take benefit of Bull intervention.

2.3.4.2 STK4890 (Twinpeaks Drive) in STK9710 Library (Timberwolf)

Drive reconnection

Up to 8 STK4890 drives can be connected in a STK9710 library. For a full configuration two SCSI PCI boards are needed.
The reconnection kit is the same as for STK9712 stand alone drives.
Refer to § 2.3.3.2 to get more details.

Library technical status

The minimum library firmware level is 1.08.05.
To update the robot firmware, use the normal procedure (with a floppy disk).

2.3.4.3 STK9490 (Timberline Drive) in STK9360 Library (Wolfcreek)

Drive reconnection

Up to eight STK9490 drives can be connected in a STK9360 library. For a full configuration two SCSI PCI boards are needed.
The reconnection kit is the same as for STK9712 stand alone drives.
Refer to § 2.3.3.2 to get more details.



Drive technical status

The STK9490 drive minimum technical status is:

SSU: 8.1.0

SCSI: 8.3.0

To update the drive firmware use the normal procedure (with a laptop).

Drive parameters

The figure below shows the configuration parameters for the Timberline drive (STK9490).

Parameter	Value
CTU Device Type	9490 Timberline
CTU Channel Type	SCSI
SCSI wide transfer mode	Enabled
SCSI ID	2 (SCSI ID for drive #1)
	3 (SCSI ID for drive #2)
CTU LAN id	# LAN
CSL initial state upon power up	System mode
SCSI fast transfer mode option	Fast transfer enabled
SCSI SDTR/WDTR mode option	SDTR/WDTR disabled
SCSI term power mode option	Disabled
SCSI Code/Emulation option	00
Clean tape threshold	Standard
ICRC mode	ICRC enabled
Enhanced Extended (EE) tape hardware feature installed	EE hw not installed

Library technical status

The minimum library firmware level is

To update the robot firmware, use the normal procedure (with a floppy disk).



2.3.4.4 STK9490 (Timberline Drive) in STK9740 Library (Timberwolf)

Drive reconnection

Up to four STK9490 drives can be connected on one LSM of the STK9740 library. The maximum number of LSMs is theoretically six but on DPS 7000 the maximum number of LSMs is two, and the maximum number of drives is eight. For a full configuration two SCSI PCI boards are needed. The hardware reconnection kit is the same as for STK9712 stand alone drives. Refer to § 2.3.3.2 to get more details.

Drive technical status

The STK9490 drive minimum technical status is:

SSU: 8.1.0

SCSI: 8.3.0

To update the drive firmware use the normal procedure (with a laptop).

Refer to § 2.3.4.3 to get details on drive parameters.

Library technical status

The minimum library firmware level is 0.09.03.

To update the robot firmware, use the normal procedure (with a floppy disk).



2.3.5 ESCALA S-100, ESTRELLA 340 Library Server Reconnection

The command path of a library is done through an AIX server.

This server is connected to the DPS 7000 with a telecommunication facility (LAN access).

The server is also connected to DPS 7000/XTA platform with a LAN connection. Therefore it is reconnectable without any change on the hardware standpoint.

Caution: if the LAN Server connection is a 10 Mb/s PCI board, the physical connection has to be done through a telecommunication switch to preserve the 100Mb/s throughput of the DPS 7000/XTA native connection.

Hardware Reconnection Kit Definition

Cables

No specific cable is required. A telecommunication switch (10/100 Mb/s) may be used to avoid a throughput limitation on the DPS 7000/XTA network.

DPS 7000/XTA Controller

The LAN PCI board selected for DPS 7000/XTA is:

- Ethernet 10/100 TX Intel Pro/100+ (MI : ALN-515-00-00)
- Spare part reference : 154-015010000

Subsystem firmware migration

Not applicable.

Software Components

DPS 7000/XTA driver

Standard W2000 telecommunication TCP/IP protocol.



ACSLs software package

The minimum version for ACSLS on DPS 7000/XTA is the same as on the DPS 7000 platform.

If the installed version is not up to date, it may be recommended to update it, but not at the same time as DPS 7000/XTA migration. We recommend to update ACSLS version at least several days before the DPS 7000/XTA evolution. ACSLS evolution implies a commercial order.

Configuration and parameters

The library server has to be known from the DPS 7000/XTA platform (TCP/IP address and server name).

New parameters have to be set in the GCOS7 configuration file for the ACSLS server host name. Some AIX ACSLS parameters have to be updated on the library server.

A new software component (SSI) has to be installed on the library server (a part of old CLX has been transferred on the library server to be able to dialog with ACSLS software). This software is installed directly from DPS 7000/XTA by downloading it from a specific DPS 7000/XTA WEB page: **refer to the chapter 4 of this manual (CLX migration to DPS 7000/XTA).**

On the DPS 7000/XTA side, the download operation is only possible if IIS functionality is installed and validated in Windows™ 2000.

Maintenance Tools

Local access

Administration tools for AIX server remain the same as it were when connected to the DPS 7000 platform. No change needed.

Remote access

The server remote access remains the same as it was when connected to the DPS 7000 platform.



2.3.6 Stand Alone DLT Cartridge Drive Reconnection

2.3.6.1 Powersave based on DLT4000 Drive

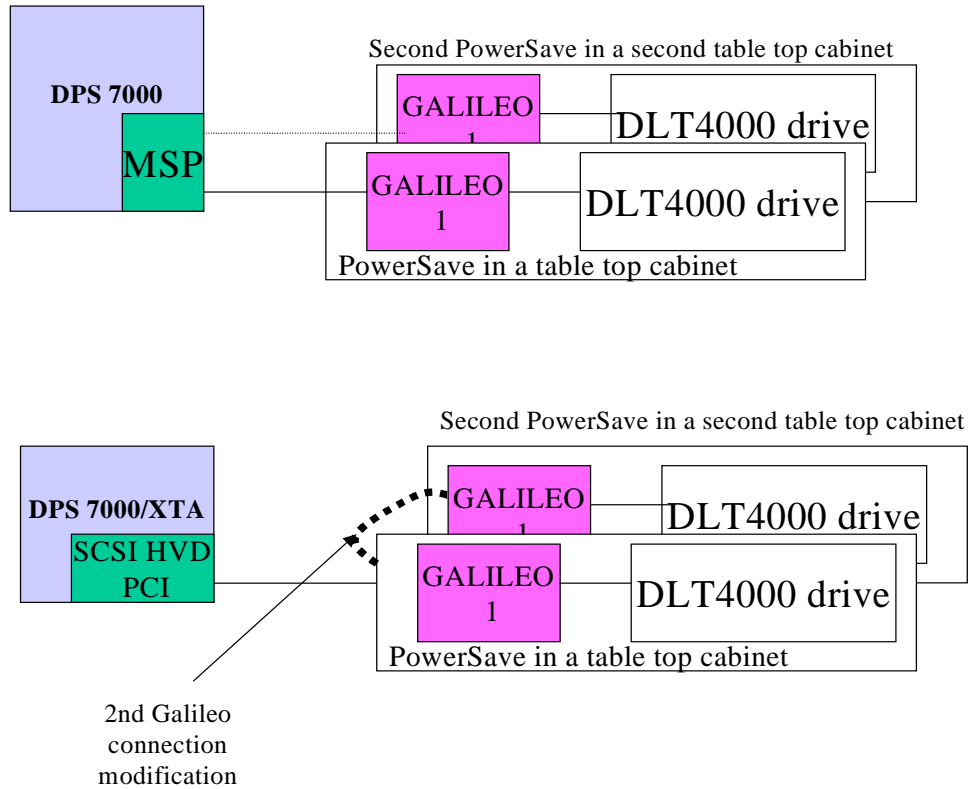
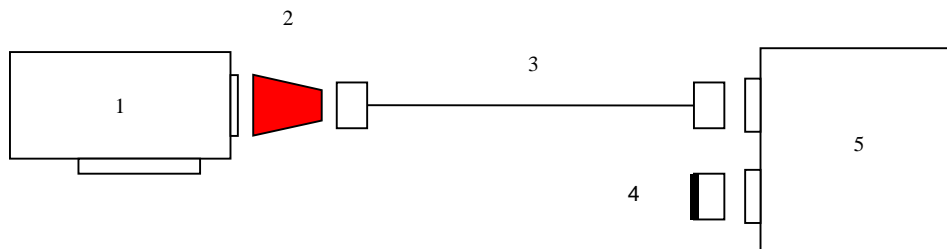


Figure 2-9. Powersave Reconnection on a DPS 7000/XTA



Hardware Kit Definition



Item	Description	Comments	Reference	QTY
1	SCSI HVD SCSI Board	Output connector: Micro D68F	AHA2944 UW FRU: 1301630000	1
2	SCSI Adapter	Micro D68M/D50F	2AI 50787	1
3	SCSI Cable 10m	Micro D50M/D50M	Already on site	1
4	SCSI Terminator	Micro D50M differential	Already on site	1
5	Powersave	Input connector: Micro D50F differential	Already on site	1

Needs also a short SCSI 50 points cable when a second Galileo is present:
0.60m cable (50M / 50M) reference: 76211987-001.



2.3.6.2 Auto Loader PowerSave Based on DLT4000 Drive (EXB18E Robot)

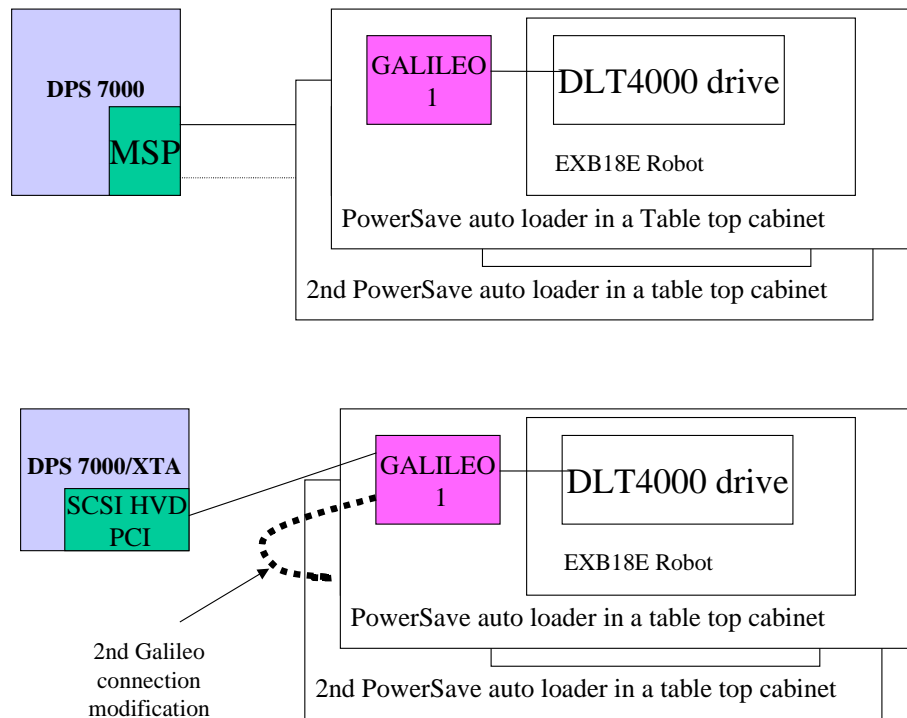


Figure 2-10. Auto Loader Powersave Reconnection on a DPS 7000/XTA

The Auto loader Powersave connection is the same as the normal Powersave connection.
Refer to 2.3.6.1 and 2.3.1 .



2.3.7 PowerSave 8000 Reconnection

2.3.7.1 PowerSave Based on DLT8000 Drive

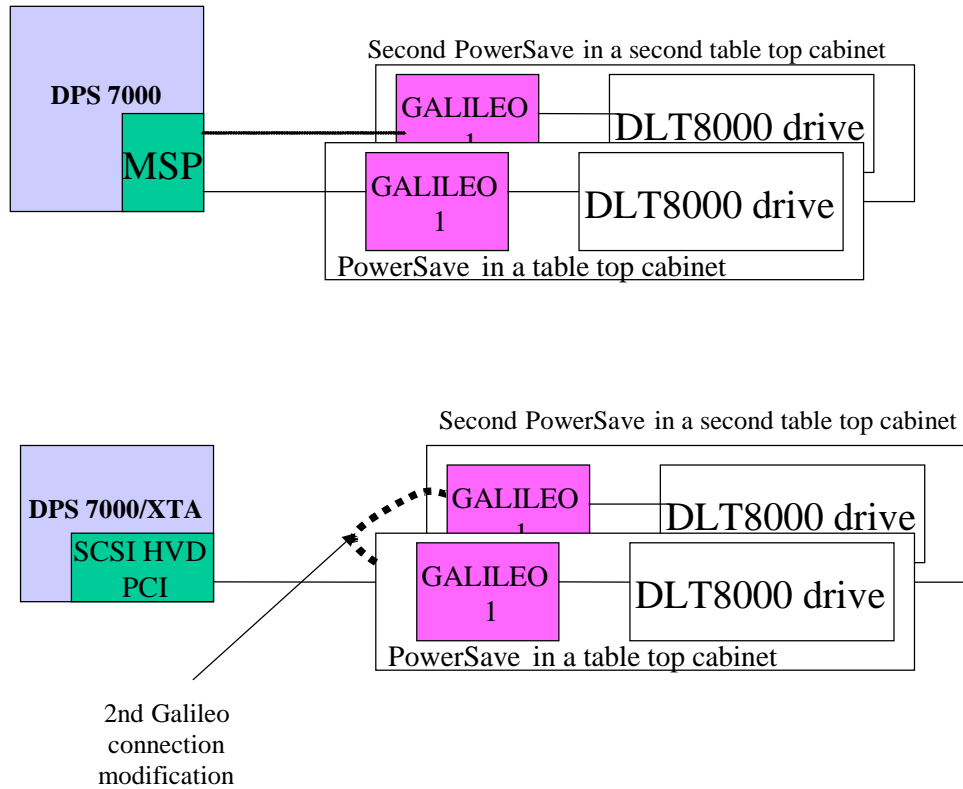


Figure 2-11. PowerSave 8000 Reconnection on a DPS 7000/XTA

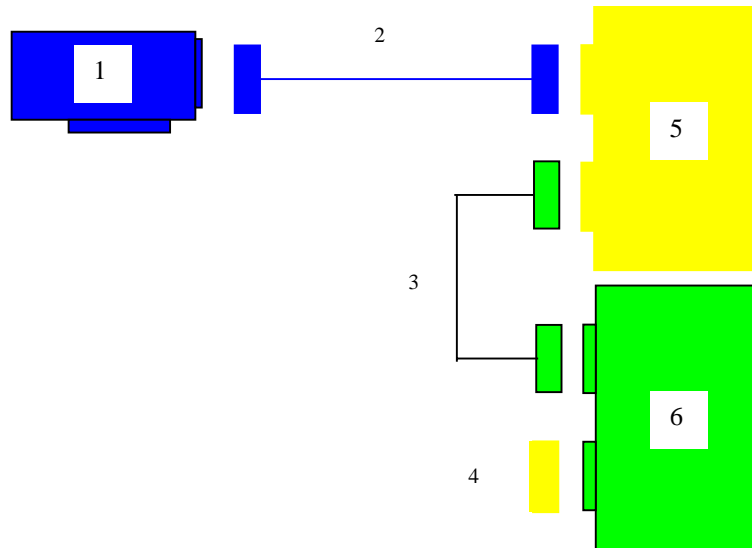
NOTES:

1. The normal equipment available for DPX70000/XTA is the Powersave 8000D which is equipped with galileo2. However, it is possible to reconnect a Powersave 8000 (equipped with galileo1) from DPS7000/TA systems. Due to the bandwidth limitation of galileo1, it is recommended to reconnect only one Powersave8000 per HBA. However, two can be daisy chained (as illustrated above) with a risk of lower performances if the two devices are used simultaneously.
2. With DLT8000 drives, you can select to use either the native DLT8000 mode (high density) or the DLT4000 compatible mode to facilitate the interchange with previous older DLT equipments.



Hardware Kit Definition

The connection to Diane host can be realized as described hereafter:



item	Description	Comments	Reference
	Streamline Diane		
1	SCSI HVD board	Micro D68 F	AHA2944 UW
2	SCSI cable 6 m	Micro D68 M / Micro D68 M	90676003-002
	PowerSave 1		
4	Terminator	Micro D68 M differential	Already on site
5	PowerSave8000 #1	Micro D68 F differential	Already on site
	PowerSave 2		
6	PowerSave8000 #2	Micro D68 F differential	If already on site
3	SCSI cable 0.5 m	Micro D68 M / Micro D68 M	90676010-001



2.3.7.2 PowerSave 8000 Loader (Overland LXL810 Robot)

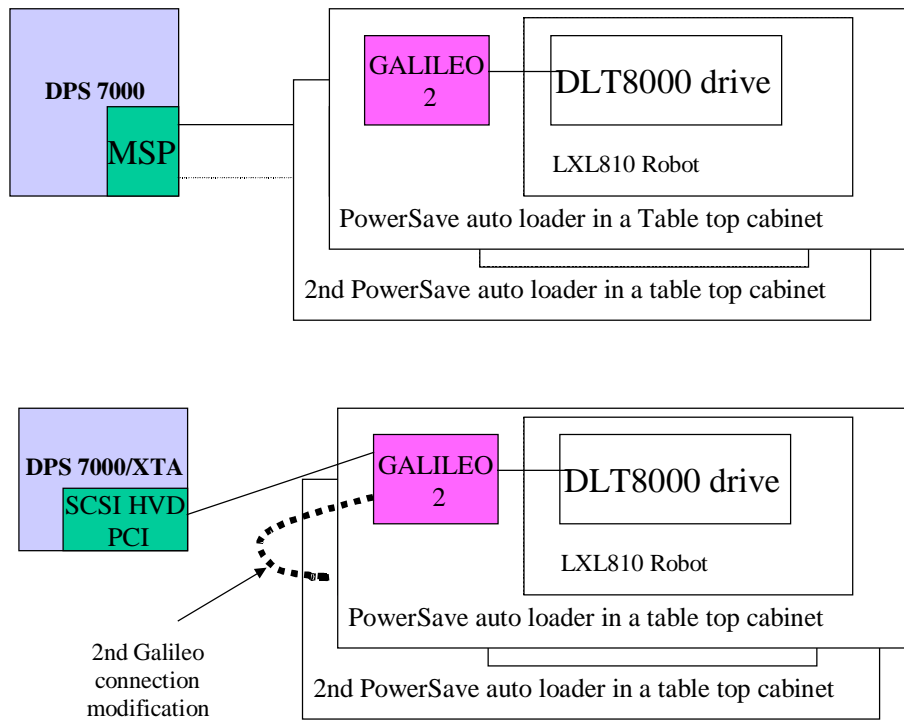


Figure 2-12. Powersave 8000 Loader Reconnection on a DPS 7000/XTA

The PowerSave 8000 Loader connection is the same as the PowerSave 8000 simple drive connection. Refer to 2.3.6.1 and 2.3.1 .



2.3.8 OpenSave Offer Reconnection

2.3.8.1 Galileo Reconnection

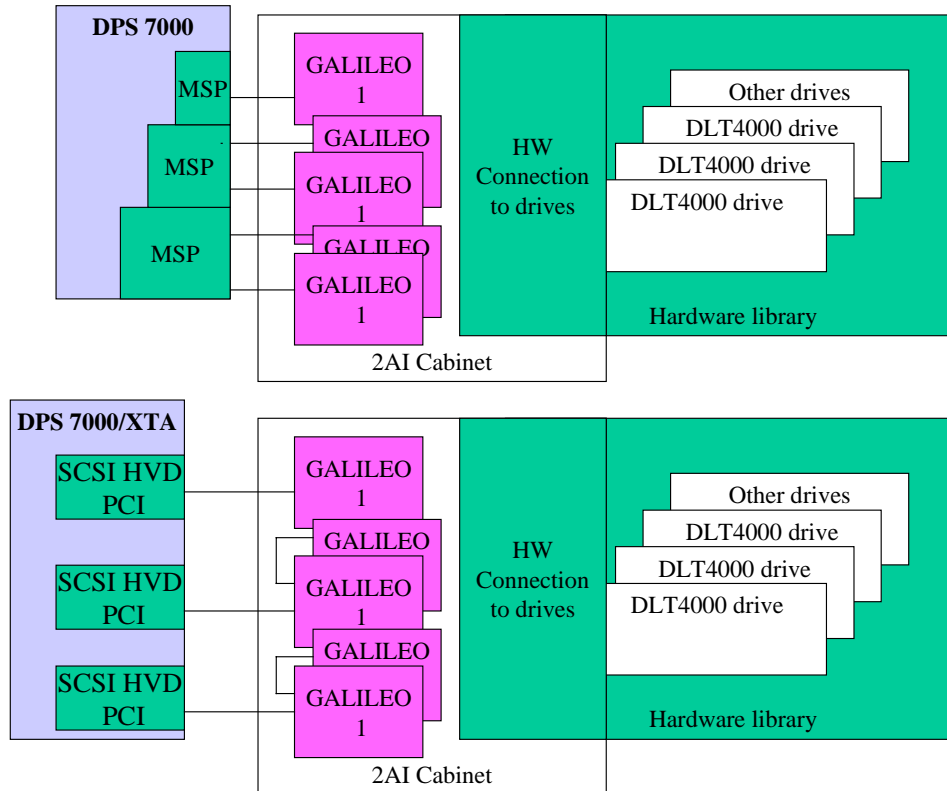


Figure 2-13. Opensave Reconnection on DPS 7000/XTA

The OpenSave connection is the same as the normal PowerSave connection. Refer to 2.3.6.1 and 2.3.1.



2.3.9 OpenSave Server Reconnection

The command path of a library is done through an AIX / NT server.

This server is connected to the DPS 7000 with a telecommunication facility (WAN / LAN access).

If the OpenSave server is planned to be connected to a DPS 7000/XTA platform with a LAN connection, therefore it is reconnectable without any change on the hardware standpoint.

Caution: if the LAN Server connection is a 10 Mb/s PCI board, the physical connection has to be done through a telecommunication switch to preserve the 100Mb/s DPS 7000/XTA native connection.

If the OpenSave server is planned to be connected to a DPS 7000/XTA platform with a WAN connection, it means that the link is done through a Mainway product, therefore read the chapter 4 which describes the telecommunication reconnection.

The OpenSave software uses Telnet to open a GCOS7 console. This functionality needs telnetd installed and validated on the DPS 7000/XTA Windows™ 2000 side or on a separate AIX or Windows™ server.

A specific component has to be installed on the Opensave server (CNDSA): see Chapter 4 of this manual to get more information on the CNDSA migration.

Hardware Reconnection Kit Definition

Cables

No specific cable

If the Opensave server is connected to the LAN, a telecommunication switch (10/100 Mb/s) may be used to avoid a throughput limitation on the DPS 7000/XTA network.

DPS 7000/XTA Controller

The LAN PCI board selected for DPS 7000/XTA is:

- Ethernet 10/100 TX Intel Pro/100 Marketing reference: ALN-0519-00-00
- Spare part reference (FRU): 154-015010000.



Subsystem firmware migration

Not applicable.

Software Components

DPS 7000/XTA driver

Standard W2000 telecommunication TCP/IP protocol.

Telnetd and CNDSA have to be installed on the Windows™ side of DPS 7000/XTA or on a separate AIX or Windows™ server.

OPENSARE Software Package

To adapt OpenSare software to the new DPS 7000/XTA context, consult the 2AI support team.

Configuration and parameters

The library server has to be known from the DPS 7000/XTA platform (TCP/IP address and server name).

Maintenance Tools

Local access

The administration tools for the AIX/ NT server remain the same as they were when connected to DPS 7000 platform. No change is needed.

Remote access

The server remote access remains the same as it was when connected to the DPS 7000 platform.



2.4 Printer Reconnection

2.4.1 Direct Local Printer Reconnection

PRUx0x 800/900, 701/801/901, 702/802/902, 702A/802SA/902SA local printers can be connected:

- Printers may only be reconnected through serial line interface, using RS232 or RS-422 protocol according to the model
The physical connection is done through an USB/serial adapter.
Serial ports are also available in the legacy I/O part, when not used by the RSC or RMS functions. This connection has to be treated under NSPR.

Minimum Hardware and Firmware Technical Status allowing Reconnection

The Printer firmware minimum level is V2-04K for non Euro compliant printers and V2-07C for Euro compliant printers.

2.4.1.1 Hardware / Firmware Reconnection Kit Definition

- Serial connection through the built in COM port (without USB/serial Adapter)

RS-232 Interface only

Length of this **connection short is limited to 15 meters** from DPS 7000/XTA system to printer.

- Printer cable reference: EVMBPC-0050 of Blackbox

- **USB connection:**

RS-232 Interface

Length of this **connection short is limited to 15 meters** from DPS 7000/XTA system to printer.

- USB/serial adapter Edgeport/4 of “Inside Out Networks”
- Reference: 301-1000-04
- Printer cable reference: EVMBPC-0050 of Blackbox

The adapter is powered by the USB link, it is possible because we offer a maximum connection of 2 printers on this converter.

The use of the two other ports implies a separate power supply for the adapter.



RS-422 Interface

Length of this **connection long is limited to 150 meters** from DPS7000/XTA to printer.

- USB/serial adapter Edgeport/4i of “Inside Out Networks”
- Reference: 301-1000-24
- Printer cable reference: CBLD022-2x00 (length of 20, 60, 100, 150 meters are available).

The adapter is powered by the USB link, it is possible because we offer a maximum connection of 2 printers on this converter.

The use of the two other ports implies a separate power supply for the adapter.

For Both Connection, the BIOS and code of the adapter can be updated using the ionflash.exe utility delivered on a CD-ROM media (Inside Out Networks P/N 373-1009-01 version 1.1)

USB driver file is usbhub.sys version 5.00.2195.2869 (included in W2K).

Edgeport driver file is edgeser.sys version 1.09.01 (specific CD-ROM delivered with V7000 installation CD-ROM).

Printer configuration chart

Printer model	Interface	Baud Rate	Protocol
PR800n – PR900n	RS-232	9600 - 19200 19200*	XON/XOFF
	RS-422 NA	NA	NA
PR800 – PR900	RS-232	9600 - 19200 19200*	Series1 1 Char
	RS-422 NA	NA	NA
PXx01 – PRx02	RS-232	9600 - 57600 38400*	Series1 1 Char
	RS-422	9600 - 57600 38400*	Series1 1 Char

*: Recommended Baud Rate value

NA: Not Available



IMPORTANT: (Printer configuration draft)

The Interface, Baud Rate and Protocol parameters values must be the same as the ones set in the V7000 configuration using the Configuration Editor Tool.

- **PRINTER MODELS PR800N, PR900N ARE PR800 AND PR900 PRINTERS WITHOUT IGP BOARD (N MEANS NON IGP).**
- Printer models PR800, PR900 are printer with IGP board.



Be careful with the printer cable reference. The pinning are different between cables for RS-232 and RS-422 interfaces and a wrong choice leads to unpredictable results.

Subsystem firmware migration

The printer firmware has to be updated to the recommended level (information given at support level). Update this firmware using the current strategy used on the DPS 7000 system (download and install the new firmware using a laptop).

The printer configuration has to be updated to take into account the new interface type and to adapt other parameters.

The supported printer configurations are:

- **Non IGP configuration For PR800n and PR900n**

Refer to annex A.1: Configuration parameters for PR800n/PR900n

- **IGP configuration for PR800 and PR900**

Refer to annex A.2: Configuration parameters for PR800/PR900

- **Configuration for PRx0y V2-04K firmware version**

Refer to annex A.3: Configuration parameters for PRx01/PRx02 - V204K

- **Configuration for PRx0y V2-06J firmware version**

Refer to annex A.4: Configuration parameters for PRx01/PRx02/PRX02A – V206J

- **Configuration for PRx0y V2-07C firmware version**

Refer to annex A.5: Configuration parameters for PRx01/PRx02/PRX02A – V207C

2.4.1.2 Administration and Maintenance Tools

Local access

The main maintenance task on the printer is to update the firmware (if we don't speak about repair process). To do this update, a tool is mandatory (laptop).

Remote access

There is no remote maintenance access on the printers.



2.4.2 Remote Printer Reconnection

2.4.2.1 Through GTWriter

The reconnection of a remote printer on LAN follows the LAN reconnection itself (see Chapter 4 of this manual).

2.4.2.2 Through OPENGTWriter

The reconnection of a remote printer on a LAN, if OPENGTWriter was used on DPS 7000, is described in the Interoperability solution evolution chapter (see chapter 4 of this manual).

2.4.2.3 Using Xprint Facility

Xprint is a software solution, running on:

- a separate NT server
- a separate UNIX server

The reconnection of such system on DPS 7000/XTA corresponds to the server reconnection itself and to the OPENGTWriter solution evolution.

There is no specific problem to reconnect the XPRINT server if it is connected to an Ethernet LAN. Take only care of the type of the connection (10 or 100Mb/s). If it is 10 Mb/s we recommend to connect the server on a 10 Mb/s entry of a 10/100Mb/s switch to protect the full speed on the DPS 7000/XTA Ethernet LAN.

If the XPRINT server is connected to a WAN, it has to be connected on the Mainway subsystem which is mandatory on DPS 7000/XTA to reconnect WAN.

The OPENGTWriter migration is described in the Interoperability solutions evolution chapter (see chapter 4 of this manual).





3. Data Migration from DPS 7000 to DPS 7000/XTA

3.1 General Information about Customer Data Migration

3.1.1 Data Compatibility Rules between DPS 7000 and DPS 7000/XTA Platforms

Disk Data format is not compatible between a disk subsystem connected to a DPS 7000 platform and a disk subsystem connected to a DPS 7000/XTA platform. Therefore, it is not possible to share a GCOS volume between a DPS 7000 and a DPS 7000/XTA.

To exchange data between a DPS 7000 and a DPS 7000/XTA platform, use either a tape/cartridge method or telecommunication facilities.

3.1.2 GCOS7 Disk File System Representation on DPS 7000/XTA Platform

A GCOS7 volume is mapped onto a Windows™ file (in NTFS format).

After the file has been created, the contents of the corresponding GCOS7 volume have to be restored using standard GCOS7 utilities (VOLREST / FILREST).

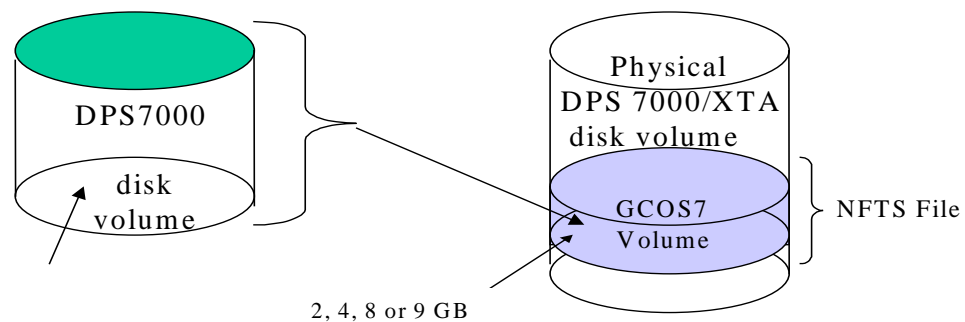


Figure 3-1. GCOS7 Disk Volume on a Windows™ File

The file size seen by Windows™ will be either 2, 4, 8 or 9 GB. This size cannot be dynamically increased.

The effective sizes of the XTA GCOS files are:

- 20971 * 100K for a XTA 2 GB file
- 41943 * 100K for a XTA 4 GB file
- 83886 * 100K for a XTA 8 GB file
- 94371 * 100K for a XTA 9 GB file (requires a disk with a minimum 18GB physical size)

The effective sizes of the DPS 7000 disk volumes are:

- 13348 * 100K for a LSS 1.8 GB disk
- 20770 * 100K for a LSS 2.5 GB disk
- 84855 * 100K for a FDA7 9 GB disk
- 87890 * 100K for a CDA7 9 GB disk
- 40528 * 100K for a SDA7 4 GB disk
- 85635 * 100K for a SDA7 9 GB disk

NOTES

1K = 1024 bytes

Sizes above show that a 9 GB disk that is more than 95% full cannot be restored on an XTA 8 GB file, unless it can be reorganized before it is migrated. It can then be restored on an XTA 9 GB file (if a disk with at least 18 GB of physical size is available).



3.1.3 How to Optimize GCOS7 Volumes on DPS 7000/XTA Physical Disks

Windows™ files that correspond to the GCOS7 disks must be organized within a tree structure. The root must be named "GCOS_Disks".

The directory structure depends on:

- the number of physical disks attached to the platform
- the number of Windows™ partitions defined on these disks
- the access description mode: "<letter>:" for logical device, "<directory name>" for disk folder

Different structures can be proposed for these directories. We recommend the following method to describe them: on the "E:" logical device, have a directory that describes the whole disk space, i.e. the full set of disk partitions (logical volumes) available on the server. With this kind of description, you can restrict control definition and application to the GCOS7 volume space. Other non GCOS files can be located on the disks without conflict with the GCOS volume specific protection rules.

EXAMPLE

Assume a DPS 7000/XTA server with 2 K1 disk subsystems, each one having 8 logical disks (partitions). You will come to the following description:

- A directory for the server whole disk space: GlobalDiskSpace
- One level 2 subdirectory per disk subsystem: K1_i
- At level 3, one "disk folder" per partition (logical volume): K1_i_j
- Then in each "disk folder", the GCOS7 directory: GCOS_Disks, together with possible directories for non GCOS data: Other_i



		Disk Folder		Disks
C:\GlobalDiskSpace	\K1_1	\K1_1_1	GCOS_Disks Other_1	MS01 MSL1
	----	\K1_1_2	GCOS_Disks Other_2	MS02 MSL2
	----	\K1_1_3	GCOS_Disks Other_3	MS03 MSL3
	----
	----	\K1_1_8	GCOS_Disks Other_8	MS14
	\K1_2	\K1_2_1	GCOS_Disks Other_9	MS21 MSN1
	----	\K1_2_2	GCOS_Disks Other_10	MS22 MSN2
	----	\K1_2_3	GCOS_Disks	MS23 MSN3
	----
	----	\K1_2_8	GCOS_Disks Other_16	MS3B MSPB

The access path of a GCOS7 volume is known by the DPS 7000/XTA configuration. It is in the format:

E:\GlobalDiskSpace\K1_1\K1_1_1\ for example where:

- "D:" corresponds to the DPS 7000/XTA physical name or DPS 7000/XTA partition name

The access path of a GCOS7 volume is displayed in the V7000 configuration manager utility when selecting a MCxx resource.

The GCOS disks can be allocated on several DPS 7000/XTA physical disks. To avoid performance problem, create files for critical GCOS7 volumes on separate disks.



3.2 Various Data Migration Technics

3.2.1 Overview

This section presents several methods to transfer data from a DPS 7000 platform to a DPS 7000/XTA platform, and discusses their respective advantages and drawbacks.

NOTES:

1. The simplest method is certainly to establish a one to one correspondence between DPS 7000 disk volumes and XTA GCOS files. The same volume names are kept and the VOLSAVE/VOLREST utilities are used as the migration tools. Choose this method everywhere applicable.
2. Migration is an opportunity to reorganize files, through the techniques listed below.
3. VBO format is supported only through the MNMIG tools.

Using VOLSAVE / VOLREST utilities with REORG option



CAUTION:

Without the REORG option, a large amount of space can be lost on the receiving XTA GCOS files (for example, 2 GB are lost if 2 GB are transferred on a 4 GB file).

- Utilization Scope
 - One to one copy of a full volume **with no change of the volume name**
 - Quite suitable to migrate data from
 - 1,8 / 2,5 GB LSS to a 2 GB XTA volume
 - 4 GB SDA7 to a 4 GB XTA volume
 - 9 GB SDA7 (maximum occupancy rate 97%) to a 8 GB XTA volume (full occupancy) to a 9 GB XTA volume
 - 9 GB CDA7 (maximum occupancy rate 95%) to a 8 GB XTA volume (full occupancy) to a 9 GB XTA volume
 - 9 GB FDA7 (maximum occupancy rate 98%) to a 8 GB XTA volume (full occupancy) to a 9 GB XTA volume



- Advantages
 - Does not require any modification of the production JCL's
 - File cataloguing operations do not need to be revisited
 - Reassembles multi-extent files
 - Migration JCL is simple
- Drawbacks
 - Does not allow migrating a 100% full 9 GB disk

Using VOLSAVE / VOLREST utilities with REORG and NCLEAR options



CAUTION:

Without the REORG option, a large amount of space can be lost on the receiving XTA GCOS files.

- Utilization Scope
 - to copy n volumes to one full volume (e.g., six 1,8 GB LSS, or four 2,5 GB LSS, or two 4 GB SDA to a 8 GB XTA volume)
 - it is recommended to first transfer the SITE.CATALOG file (using FILSAVE / FILREST) before starting the data migration operations
- Advantages
 - Packs several disks into a single larger one
 - Reassembles multi-extent mono-volume files
- Drawbacks
 - Location information of catalogs and catalogued files must be modified directly into the SITE.CATALOG
 - Does not process the multi-volume files
 - Volume names are to be updated in the production JCL's, especially for UNCAT files



Using FILSAVE / FILREST utilities

- Utilization Scope
 - to migrate data application by application, or for a list of files irrespective of the source volume sizes
 - it is recommended to first allocate or restore catalogs on the receiving disks before starting the data migration operations
- Advantages
 - Packs together files coming from several disks
 - Migrates files from a 100% full 9 GB volume
 - Reassembles multi-extent multi-volume files
 - Files are immediately catalogued on the receiving volume (if the above recommendation has been complied with)
- Drawbacks
 - CAT and UNCAT files cannot be processed together
 - A high number of migration operations may be required (one per directory)
 - Volume names are to be updated in the production JCL's, especially for UNCAT files
 - File locations on the receiving disk have to be monitored within FILREST (overflow)

Using MNMIG Export / Import Tools

- Utilization Scope
 - to migrate data application by application, or volume (or part of volume) by volume, irrespective of the source volume sizes
 - it is recommended to not migrate the catalogs, but to allocate them on the receiving disks before starting the data migration operations
- Advantages
 - Packs together files coming from several disks
 - Migration JCL is generated by the tool
 - The tool handles the receiving volume overflow
 - Reassembles multi-extent multi-volume files
 - VBO source disks are accepted
 - All files are catalogued on the receiving volume (if the above recommendation has been complied with)



- Drawbacks
 - Many and lengthy migration operations are required (one job per file)
 - Volume names are to be updated in the production JCL's, especially for UNCAT files
 - A maximum of 50 files per batch is recommended

Using TELECOM

- Utilization Scope
 - to migrate data file by file, irrespective of the source volume sizes
 - it is recommended to first allocate catalogs on the receiving disks before starting the data migration operations
 - Advantages
 - Reassembles multi-extent multi-volume files
 - Files are catalogued on the receiving volume (if the above recommendation has been complied with)
 - Drawbacks
 - Many and lengthy migration operations are required
 - Requires both systems to be simultaneously operational, and emitting and receiving volumes to be simultaneously available
 - CDA7 / FDA7 reconnection not possible
 - Volume names are to be updated in the production JCL's, especially for UNCAT files
 - CU and LM libraries must be converted into "flat" files for transfer purpose
- Because of so many drawbacks, this method is generally not recommended.



IMPORTANT:

In all cases, the SITE.CATALOG, SITE.STARTUP, SITE.HELP and SITE.QUOTA files must be transferred before the data migration operations are started.

Also note that migration is more complex if data from several DPS 7000's are to be migrated on a single DPS 7000/XTA platform.



3.2.2 Data Migration Using Tape or Cartridge Devices

GCOS7 volumes have to be restored only through GCOS7 utilities (no utility can be used on Windows™). The best result will be obtained if saves are done at volume level.

A FILSAVE/FILREST Example

All types of files can be transferred using FILSAVE / FILREST utilities, regardless of the file organization.

Job to save a directory with all its files:

```
$JOB MIG_SAVE ;
MVL DVC=CT MD=MIG1 ;
FILSAVE INFILE=MIG.CATALOG
      OF=(MIG.CATALOG DVC=&DVC MD=&MD END=LEAVE) ;
FILSAVE INSET=(MIG.** REF=*EX)
      OUTFILE=(MIG.** DVC=&DVC MD=&MD FSN=NEXT) ;
$IN EX PRINT ;
^MIG.CATALOG ;
$ENDINPUT ;
$ENDJOB ;
```

Job to restore a directory with all its files:

```
$JOB MIG_REST ;
MVL DVC=CT/M6 MD=MIG1 ;
CATALOG MIG TYPE=DIR ; JUMP CONTINUE ;
FILREST INFILE=(MIG.** DVC=&DVC MD=&MD)
      OUTSET=(MIG.** DVC=MS/FSA MD=MSK4 CATNOW) FMEDIA OUTALC ;
$ENDJOB ;
```

A VOLSAVE/VOLREST Example

VOLSAVE/VOLREST utilities can also be used, with a mandatory REORG option.

Job to save a volume:

```
VOLSAVE INVOL=(MD=TOTO DVC=MS/FSA)
      OUTFILE=(TOTO DVC=CT MD=TOTO) ;
```

Job to restore a volume on a disk with a different size:

```
COMM 'gcl RESTORE_DISK VOL=toto:ms/fsa
      INFILE=toto:toto:ct REORG=1 ;' ;
VOLREST OUTVOL=(MD=TOTO DVC=MS/FSA)
      INFILE=(TOTO DVC=CT MD=TOTO) REORG ;
```



Job to restore another volume on a receiving volume that already contains other files (e.g., case of four 2 GB disks grouped on a 8 GB disk):

```
COMM 'gcl RESTORE_DISK VOL=toto:ms/fsa
      INFILE=titi:titi:ct REORG=1 KEEPVTOC=1;';
VOLREST OUTVOL=(MD=TOTO DVC=MS/FSA)
      INFILE=(TITI DVC=CT MD=TITI) REORG NCLEAR;
```

A MNMIG Example

>>>> On system to migrate :

```
S: MNMIG MIGLIB=malib.JCL;
C: DEFINE_CONTEXT MIGFIC BASIS='migfic.catalog' -
FROM1=LSSF9:MS/FSA TO1=010960:CT/LIB/36T;
      CONTEXT MIGFIC HAS BEEN SUCCESSFULLY DEFINED
C: SAVE_CONTEXT;
      CONTEXT MIGFIC HAS BEEN SUCCESSFULLY SAVED
      MEMBER MIGFIC_CX HAS BEEN CREATED
C: GENERATE_JCL;
      GENERATE_CL                                CONTEXT: MIGFIC
+-----+

+-----+
SEARCHING AND SELECTING FILES FROM THE BASIS...
+-----+

* BEWARE THAT THE FILE MIGFIC.CATALOG IS A CATALOG

+-----+
      BEGINING OF THE GENERATION...

STATEMENTS GENERATED FOR FILE: MIGFIC.CATALOG
STATEMENTS GENERATED FOR FILE: MIGFIC.DOC
STATEMENTS GENERATED FOR FILE: MIGFIC.SLLIB
STATEMENTS GENERATED FOR FILE: MIGFIC.UFASISEQ
STATEMENTS GENERATED FOR FILE: MIGFIC.UI

      ... END OF THE GENERATION
+-----+
```




```
C: EXECUTE_MIGRATION;

>>>>>>> Validate grid command ENTER_JOB_REQUEST

EXECUTE_MIGRATION COMMAND COMPLETED
C: /
<<<13:02
>>>>> automatique Starting the backup jobs(to be control

>>>>> On system take in the migration :
S: CRDIR migfic;
S: CRCAT migfic VOLUME=< disk name receiving> NBOBJECT=100;
S: MNMIG MIGLIB=malib.JCL;
MNMIG - MIGLIB : MALIB.JCL
CONTEXT:
+-----+
C: DEFINE_CONTEXT MIGFIC BASIS='010960:ct/lib/36t';
+-----+
SEARCHING AND SELECTING FILES FROM THE BASIS...
+-----+

* THE MAPPING READ ON TAPE MALIB.JCL HAS BEEN LOADED
(MAPPING OF THE FIRST STAGE OF THE MIGRATION)
USE MODIFY_CONTEXT IN ORDER TO UPDATE THE TARGET VOLUMES
CONTEXT MIGFIC HAS BEEN SUCCESSFULLY DEFINED

MNMIG - MIGLIB : MALIB.JCL
CONTEXT: MIGFIC
+-----+

C: MODIFY_CONTEXT
MNMIG - MIGLIB : MALIB.JCL
CONTEXT: MIGFIC
+-----+

>>>>>>> Re-displaying the concext grid;
>>>>>>> modify in page 2 the line "T01" < disk name receiving>
>>>>>>> validate the command

CONTEXT MIGFIC HAS BEEN SUCCESSFULLY MODIFIED
C: SAVE_CONTEXT;
* 2ND STAGE OF AN INDIRECT MIGRATION:
MIGRATION RULES CANNOT BE SAVED
CONTEXT MIGFIC HAS BEEN SUCCESSFULLY SAVED
MEMBER MIGFIC_CX HAS BEEN CREATED
C: GENERATE_JCL;
GENERATE_CL CONTEXT: MIGFIC
+-----+
```



```
+-----+
SEARCHING AND SELECTING FILES FROM THE BASIS...
+-----+

+-----+
BEGINING OF THE GENERATION...

STATEMENTS GENERATED FOR FILE: MIGFIC.CATALOG
STATEMENTS GENERATED FOR FILE: MIGFIC.DOC
STATEMENTS GENERATED FOR FILE: MIGFIC.SLLIB
STATEMENTS GENERATED FOR FILE: MIGFIC.UFASISEQ
STATEMENTS GENERATED FOR FILE: MIGFIC.UI

... END OF THE GENERATION
+-----+

C: EXECUTE_MIGRATION;

>>>>>>> Validate The grid of ENTER_JOB_REQUEST command

EXECUTE_MIGRATION COMMAND COMPLETED
C: /
<<<15:30
>>>>>>> automatic Starting the restoration jobs
```

**CAUTION:**

In case of disk subsystem reconnection, the disks have to be reformatted: after files/volumes have been saved and before the restore operations have been successfully completed, the user data exist only on the save tapes or cartridges. To reduce the risk of loosing data during the restore phase, it is highly recommended to save each file/volume twice on two distinct media.



3.2.3 Data Migration Using Telecommunication Facilities

The telecommunication facilities should be used to migrate data only when these data are seen as a "flat" file (that means no specific organization such as library or database).

To transfer "non flat" files using telecommunication mechanism you can use the following procedure:

- FILSAVE of the library to a disk file

The following is an example of JCL to save a GCOS7 directory with catalog information:

```
$JOB SAV_DIR;
MVL DVC=MS/FSA MD=MSK4 DIR=&1;
FILSAVE INFILE=&DIR!! .CATALOG OF=(SAV&DIR DVC=&DVC MD=&MD)
    OUTALC;
FILSAVE INSET=(&DIR!! .** REF=*EX),
    OUTFILE=(SAV&DIR DVC=&DVC MD=&MD) SAVEMODE=APPEND;
$IN EX PRINT JVALUES;
^&DIR!! .CATALOG;
$ENDINPUT;
$ENDJOB;
```

- Transfer the resulting file on the DPS 7000/XTA platform (using UFT)

```
$JOB TRANSFERT;
MVL DVCIN=MS/FSA DVCOU=MS/FSA, MDIN=MSK4, MDOUT=MSKS,
SITEIN=BCOE, SITEOUT=KA17, DIR=&1;
FILFR INFILE=(SAV&DIR MD=&MDIN DVC=&DVCIN SIT=&SITEIN)
    OUTFILE=(SAV&DIR MD=&MDOUT DVC=&DVCOU SITE=&SITEOUT)
    CREATE=NEW, OUTALC, BINARY;
$ENDJOB;
```

- FILREST the transferred file on the DPS 7000/XTA target disk.

The following is an example of JCL to restore the previously saved GCOS7 directory with catalog updating:

```
$JOB REST_DIR;
MVL DVCIN=MS/FSA MDIN=MSK4 DVCOU=MS/FSA MDOUT=MSK5 DIR=&1;
FILREST INFILE=(SAV&DIR DVC=&DVCIN MD=&MDIN),
    OUTSET=(&DIR.** DVC=&DVCOU MD=&MDOUT CATNOW FILESTAT=CAT)
    FMEDIA OUTALC;
$ENDJOB;
```

The use of the telecommunication network to migrate data implies that the two systems are running at the same time. It could be impossible if migration from the old to the new system is done without bevel-edge (in case of subsystem disk reconnection for example).



3.3 Data Migration Service Offer

Here are the different possibilities that can be offered to help a customer to migrate his data:

- If there is no compatible media between his DPS 7000 platform and DPS 7000/XTA platform (ex: EXABYTE drive), two different cases are to be considered:
 - The tape/cartridge device of the DPS 7000/XTA configuration is connectable on the DPS 7000 platform: we recommend to modify the DPS 7000 configuration to connect the tape/cartridge device, and to alternatively connect it to the DPS 7000 (to save the disk volumes) and to the DPS 7000/XTA (to restore data).
 - The tape/cartridge device of the DPS 7000/XTA configuration is not supported on the DPS 7000 platform: data migration strategy has to be sold as a specific service. In this service, a compatible device between DPS 7000 and DPS 7000/XTA will be temporarily installed to do data migration. This service should be charged to the customer.



4. Customer Production Evolution to DPS 7000/XTA

4.1 GCOS7 Environment Evolution

This chapter describes the modifications which have to be done in the pure GCOS7 world. It also describes the impact on the interoperability solutions.

4.1.1 GCOS7 Solutions Not Supported on DPS 7000/XTA

The Hardware/Software global solutions that are no longer available or replaced on DPS 7000/XTA include:

Solution	Status
Bi-systems	Not supported
CDP functions	Not supported
CDP Booster functions	Not supported
CNP7	Replaced by MainWay
CNS7	Replaced by MainWay
Mirror Disks	Replaced by RAID1 hardware technology
DCE Ally	On NSPR only
TNS/FEPS	Only for MainWay LE administration
Coupled Systems	Not supported
TDS-HA	Not supported
OPEN7	Replaced by native TCP/IP
GX-RPC	Available only on NSPR
ORACLE JDBC	Not supported



Solution	Status
UFAS Class	Replaced by JUFAS
GCOS7 Open to JAVA	OPEN7 JVM replaced by Windows JVM
RSC (for Open Master)	Not supported
UPS Management	Not supported
TPC (Time Power Control)	Not supported
TSYS Power-Off function	Not supported
SQL*Net V2 Fast	Replaced by Windows Architecture
NFS7	Not supported - Access UFAS file via JUFAS
Xform7	Not supported - Migrate on a terminal emulator (VIPLET / GLINK)
Entry-Web-Server7	Not supported - Use GWEB as an alternate solution

The OPEN7 commands that are no longer available or replaced on DPS 7000/XTA include:

Service	Impact	Detail
FTP (file transfer with GCOS)	Yes	No impact on the GCOS side, # option not supported on remote sites
shell (UNIX command interpreter)	No	The remote UNIX shell is used
cnDSA, setDSA (GCOS7 connections)	Yes	An executable module is released on UNIX
subux (to submit an UNIX command from GCOS)	Yes	Shell commands are ported from OPEN7 to UNIX
cpGTou / cputog (copy file from/to GCOS to/from UNIX)	No	A cputog / cpGTou is available on UNIX (built over FTP)



4.1.2 System Disk Evolution

The DPS 7000/XTA platform has a GCOS bootstrap disk (B-DISK) on the internal disk. This disk allows to install the production environment on the external system disk, or to restore it in case of major incident (this replace the RESTORE function of SIP in UTIL mode under GCOS7/TA).

The B-DISK (on which the customer software key is already validated and GCOS7 V10 Technical status installed) is temporarily considered as a R-DISK to be able to update the previous P-SET.

The previously existing GCOS7 configuration is to be rebuilt (PO,P2P or RP) on the sub-system external disk.

The following operations must be done:

1. Start on the B-DISK
2. Restore the production GCOS7 disks of the old DPS7000
3. Put the P-SET, operational
4. Start on the P-SET
5. Put the rest of the configuration (P2P or RP), operational.

The detail of the operations follows :

1. Start on the B-DISK

Configure the new hardware environment and activate the new configuration.

Perform INIT on the **B**-DISK, then RESTORE(/), RESTART(CLEAN)

After GCOS READY has been reached, perform CONFIG then RESTORE so that you can access the whole configuration

2. Restore the production GCOS7 disks of the old DPS7000

Perform a VOLREST on all GCOS7 disks with REORG options

3. Put the P-SET, operational

Update the bootstrap **B**-DISK IUF_CONFSET member through the following function:

```
GIUF
ADAPT LINK_SET=1 Mod_Rset=0 PSET_NAME=<customer P-DISK>:MS/FSA
```

Update the P-DISK IUF_CONFSET member through the following function:

```
GIUF
MODIFY_CONF CURCONF=(PO or P2P, depending on the P-DISK IUF_CONFSET
contents)
NEWCONF=RP
RSET_NAME=G7DISK:MS/FSA (with G7DISK=running B-DISK)
```



Both IUF_CONFSET's are now consistent together.

Perform the LEVEL_MI function:

```
GIUF
LEVEL_MI INSET=R OUTSET=P
```

then you can run the LEVEL function for GCOS in order to update the customer P-DISK with the supplied B-DISK technical status:

```
GIUF
LEVEL INSET=R OUTSET=P DOMAIN=ALL
```

You will get the following message:



CAUTION:

THE FW FILES WILL NOT BE COPIED (REL. NOT EQUAL)

Perform the update of FW files on the P_SET as follows:

```
FGF
DUPLI_BSR_OTHER
BLOAD_OTHER
```

4. Start on the P-SET

Perform INIT on the P-DISK, then RESTORE(/), RESTART(CLEAN)

5. Put the rest of the configuration (P2P or RP), operational.

Depending on the previous customer DPS7000 configuration (PO, RP, P2P) the GIUF functions: 'ADAPT', 'MODIFY_CONF', 'LEVEL_MI' and 'LEVEL' will be done and FGF functions: 'DUPLI_BSR_OTHER' and 'BLOAD_OTHER'.

NOTE:

If the customer wishes to build a new environment, he will use the standard functions of GIUF, described in the SICUG.



4.1.3 JCL / GCL Evolution

The GCOS7 applications are binary compatible for execution on a DPS 7000 platform and a DPS 7000/XTA platform.

However the JCL and GCL files have to be adapted to the new system configuration (number of disks and GCOS7 volumes, volume names, tape/cartridge device classes). The same evolution has to be done when the customer moves from a DPS 7000 system to another DPS 7000 system.

4.1.4 Catalog Evolution

As for the JCL and GCL files, the catalog file has to be adapted to the new system configuration, mainly for the location of disk files due to the new disk space allocation.

You can move your data:

- either with migrating directories of files
- or with migrating volumes - VOLREST must have the REORG option, as the emitting and receiving disks do not have the exact same sizes

The catalog is automatically updated when FILREST is used with the FMEDIA option, or VOLREST with the same media name (see JCL examples in Chapter 3 - *Data Migration Using Tape or Cartridge Devices*).



CAUTION:

The "CATMODIF DVC= MD=" command is mandatory for the restored files in case of volume renaming or grouping; the catalog files must be handled first and set to AUTOATT.



4.1.5 User Database Evolution

Production must have been stopped when database files are saved, in order to preserve data/index consistency.

IDS2 Databases

IDS2 files can be saved/restored using either GCOS7 VOLSAVE/VOLREST or GCOS7 FILSAVE/FILREST utilities.

Large UFAS Files

UFAS files can be saved/restored using either GCOS7 VOLSAVE/VOLREST or GCOS7 FILSAVE/FILREST utilities.

ORACLE Databases

If the ORACLE database is located on DPS 7000 GCOS7, it can be saved/restored using either GCOS7 VOLSAVE/VOLREST or GCOS7 FILSAVE/FILREST utilities.

Customer can also take benefit of the DPS 7000/XTA evolution to re-organize the Oracle database. This can be done using EXPORT / IMPORT procedures of the Oracle software. Refer to the Oracle documentation.

In the DPS 7000/XTA Step 1 project, an external ORACLE database cannot be located on the Windows™ part of the DPS 7000/XTA.



4.2 Evolution of the Interoperability Solutions

DPS 7000/XTA Interoperability includes the basic software necessary to build any interoperability application on the DPS 7000/XTA platform.

The DPS 7000 interoperability solutions cannot be transferred from a DPS 7000 system to a DPS 7000/XTA system. They have to be re-installed on a DPS 7000/XTA system from the delivered specific media.

An Installation summary is available in a subsection of this chapter. The Installation procedures are fully described in the *DPS 7000/XTA Interop7 User's Guide*.

This section about the Interoperability solutions is divided into several subsections:

- The first subsection briefly presents an overview of the Interoperability solutions.
- The second subsection presents a list of these Interoperability solutions, with the involved components on both the native DPS 7000 and the DPS 7000/XTA platforms.
- The following subsections describe the main solutions and their evolution in more details. When a picture is supplied to illustrate the solution architecture, the representation rules shown in the following figure apply (primarily intended for the cases where diagrams are displayed on screen or other color media).

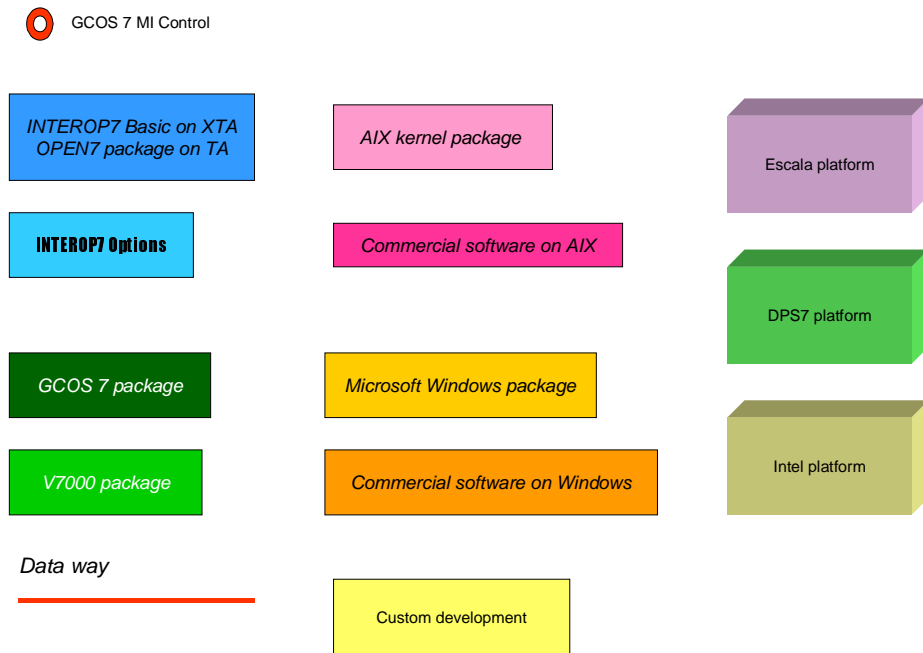


Figure 4-1. Legend

4.2.1 Functional Description Overview

This section presents some general information that should give you an easier understanding of the evolution rules later described in more details for each interoperability solution.

4.2.1.1 General

As DPS 7000/XTA is built on Windows™, all Windows™ interoperability software like DCOM is available. Bull provides several Interconnect services between the Windows™ part and the GCOS part of the platform. This allows customers or partners to adapt to DPS 7000/XTA interoperability applications by developing applicative gateways. On Windows™, Bull itself provides useful gateways -most of them previously supported on Open7-, in order to interconnect GCOS7 files and processing dimensions to all useful protocols of the Open World.

This version of the DPS 7000/XTA systems supports only GCOS7 proprietary applications on the Windows™ part of DPS 7000/XTA.



Most DPS 7000/XTA Interop7 solutions use TCP/IP. The TCP/IP link uses the Windows™ standard TCP/IP stack (Winsock). The API available on GCOS7 is sockets through SOCKG7. It is recommended to migrate your TDS DSA solutions to TDS TCP/IP whenever possible, for standardization and in order to improve the communication performance.

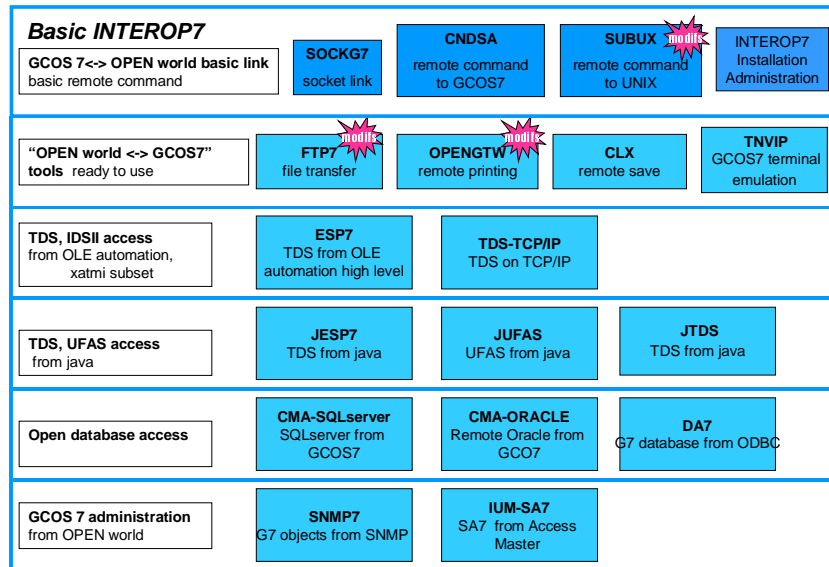


Figure 4-2. Interop7 Solutions

NOTE:

This manual describes a one to one solution evolution. It is not a guideline for a complete reengineering of the customer interoperability solutions. Services should be proposed to the customer to take benefit of the DPS 7000/XTA platform improvement versus the DPS 7000 one.



4.2.1.2 Interoperability Gateways

Principle

Interop7 solutions interconnect GCOS7 applications and open system applications. Each application has the rules of its host operating system. So, some adaptation must be provided in order to translate the rules of GCOS7 into the rules of the open systems and vice versa. These rule adapters are called gateways. More precisely, they are gateways which convert the GCOS7 protocols into the open system ones, these protocols being applicative protocols.

The gateway may be on GCOS7, on DPS 7000/XTA Windows™, on the open system partner, or for a few cases on an intermediate system (e.g., Mainway or an Application Server).

For some solutions, there are several gateways: one on DPS 7000/XTA for centralized administration, and one on PC in order to take benefit from the CPU power of all the PC's.

Note that the figure was the same with former Interop7 solutions on DPS 7000, except that some gateways were on Open7.

Classification

On DPS 7000/XTA, the open environment provided by Open7 is replaced by a Windows™ environment, and gateways which were previously on Open7 have been ported on Windows™.

All other gateways on GCOS7, on UNIX, on Mainway, or on PC, are unchanged. So, in this manual, we focus on gateways on DPS 7000/XTA Windows™. Given the fact that some solutions (such as Telnet Server7) are no longer required on DPS 7000/XTA, only three gateways remain on Windows™:

- OpenGTW for Print
- FTP7
- NT7GW for ESP7, DA7, Java, Host Connect on GTEA7, Flowbus (NSPR)



4.2.1.3 Customer Impact Summary

Interop7 solutions for DPS 7000/XTA are the continuation of existing solutions on DPS 7000. In most case there is no functional change for the user (and especially no modification in the TDS applications). Only administrative tasks may be required:

- Install / configure the gateways
- Regenerate TDS if you switch from the DSA to the TCP/IP access for ESP, DA7, or Java to TDS solutions.
- Adapt the supplied OpenGTW script samples (if needed)
- Replace the NFS7 UFAS access (if any) by the JUFAS access
- Replace GXTI access to TCP/IP by SOCKG7 access to TCP/IP, if any.
Note: the only known case is SOPRA CFT
- Modify the FTP scripts when they use the former # syntax
- Transfer OPEN7 scripts on an external UNIX server
- Replace user developments on Open7 (if any) by equivalent ones on Windows™. Services are available to help customers

More details are available for each solution described in a subsequent subsection.

4.2.1.4 Preparing the Interop Solution Migration

A facility is provided to validate XTA Interop Solutions before GCOS is installed on the XTA platform and data are migrated: an “Interop XTA” kit is supplied, to be installed on the TA GCOS7 and on the XTA Windows™ (or any standard W2000 server). The Windows™ part communicates with GCOS7 through OPEN7 sockets, as if GCOS7 and its Interoperability components were already on the XTA machine. Then you can prepare and test all the needed modifications on both GCOS7 and the remote UNIX's before the real migration takes place.

The “Interop XTA” kit is delivered by the Support Team. It is not available or maintained as a standard product (no STAR admitted). This facility is primarily intended for Support people, or at least assumed to be activated under Bull Support control.



4.2.2 Interoperability Component Overview

A shaded cell in the following arrays indicates a Bull proprietary component.

Interop7 Basic

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
Component on GCOS7	OPEN7	INTEROP_BASIC (Sockg7 API, SRVCAM server, SUBUX command, SUBUX API)
<i>Component on DPS 7000/XTA Windows™</i>		INTEROP_BASIC (Sockg7 server, cnds, INTEROP7 server Administration)
<i>Comment</i>		INTEROP_BASIC is prerequisite for any INTEROP7 solution

OPEN7 / TCP/IP stack

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
Component on GCOS7	OCS, TNS	
<i>Component on OPEN7</i>	TCP/IP stack	
<i>Component on DPS 7000/XTA Windows™</i>		Windows™ Winsocket TCP/IP stack
New Customer Visibility	OPEN7 Administration Tools	Windows™ Networking Administration Tools



OPEN7 /shell and shell scripts

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on OPEN7</i>	shell, kshell	
<i>Component on DPS 7000/XTA Windows™</i>		Prompt of text mode (DOS like) commands
<i>New Customer Visibility</i>		Supporting a UNIX standard shell on Windows™ is under customer's responsibility

Comment: a case by case analysis of the possible solutions is needed before DPS 7000 evolves to DPS 7000/XTA (develop new applications on Windows™, port scripts on UNIX, ...)

OPEN7 /telnetd

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on OPEN7</i>	telnetd	
<i>Component on DPS 7000/XTA Windows™</i>		Microsoft Windows™ telnetd

Also see *cnlsa Command* Subsection

OPEN7 /cnlsa

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on GCOS7</i>		SRVCAM: server of VCAM requests coming through sockets
<i>Component on OPEN7</i>	cnlsa (GCOS access from OPEN7 through PTQ)	
<i>Component on DPS 7000/XTA Windows™</i>		cnlsa.exe (VCAM access from Windows™)
<i>Client/App. Server UNIX</i>		cnlsa (VCAM access from UNIX)

Also see *cnlsa Command* Subsection

**OPEN7 /NFS7**

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on OPEN7</i>	NFS7 (NFS server for all OPEN7 files, and for UFAS files with fixed length records)	
<i>Component on DPS 7000/XTA Windows™</i>		Windows™ NFS, but no GCOS7 file support

Comment: Develop a new application on JUFAS.

OPEN7 /xform7

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on OPEN7</i>	xform client (mapper PC7800-X11) or xformd server	
<i>Component on DPS 7000/XTA Windows™</i>		Not supported
<i>Client/App. Server UNIX</i>	xform client (mapper PC7800-X11)	

Comment: use a Terminal Emulator (GLINK, VIPLET)

OPEN7 /subux

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on GCOS7</i>	Subux cmd : JCL, GCL, (HPL, COBOL) subux API to OPEN7 via HSL	Subux cmd: JCL, GCL, (HPL, COBOL) subux API to UNIX via socket and rexec
<i>Component on OPEN7</i>	Subux : HSL relay to the OPEN7 shell	
<i>Client/App. Server UNIX</i>		rexecd: rexec server, rexec standard protocol to UNIX applications

Also see *SUBUX* Subsection



OPEN7 /HSL

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
Component on GCOS7	HSL Interface library	HSL Interface library to GCOS7 process only
Component on OPEN7	HSL Interfaces on OPEN7	
Component on DPS 7000/XTA Windows™		No interface supplied
Comment		An internal low level interconnect supplied only between GCOS processes, not between Windows™ and GCOS (NSPR).

SOCKG7 API

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
Component on GCOS7	Socket primitive Library / on HSL to OPEN7	Socket primitive Library to Windows™
Component on OPEN7	Sockg7: server for socket requests to/from GCOS7	
Component on DPS 7000/XTA Windows™		Sockg7 : server for socket requests to/from GCOS7

Also see *SOCKG7* Subsection



FTP access to OPEN7 then to GCOS

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on OPEN7</i>	ftpd with access to OPEN7 then to GCOS (#syntax)	
<i>Component on Windows™</i>	FTP standard client	FTP standard client
<i>Client/App. Server UNIX</i>	FTP standard client	FTP standard client
<i>Comment</i>		Hint: modify the client scripts and use the GCOS direct access interface (see <i>FTP Applications</i> Subsection - <i>FTP Server</i>)

OPEN7 /FTP direct access to GCOS7

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on GCOS7</i>		SRVFTP : GCOS file server
<i>Component on OPEN7</i>	ftp7d with direct GCOS7 access	
<i>Component on DPS 7000/XTA Windows™</i>		ftp7d : server with GCOS7 access
<i>Component on Windows™</i>	FTP standard client	FTP standard client
<i>Client/App. Server UNIX</i>	FTP standard client	FTP standard client

Also see FTP Applications Subsection - FTP Server



OPEN7/FTP from GCOS7

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on GCOS7</i>	FTP client	FTP client (socket to ftp7), SRVFTP file server
<i>Component on OPEN7</i>	Getting client commands via HSL and sending to FTP	
<i>Component on DPS 7000/XTA Windows™</i>		ftp7: getting GCOS commands and sending to TCP/IP
<i>Component on Windows™</i>		FTP standard server
<i>Client/App. Server UNIX</i>		FTP standard server

Also see FTP Applications Subsection - FTP Client

ORACLE7 CMA

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>

See ORACLE Interconnect Subsection



SQL*Net V2

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on GCOS7</i>	SQL*NET V2 linked with Sockg7 interface	SQL*NET linked with Sockg7
<i>Component on OPEN7</i>	Sockg7 : server processing requests to/from GCOS7	
<i>Component on DPS 7000/XTA Windows™</i>		Sockg7: server for requests to/from GCOS7
<i>Component on Windows™</i>	ORACLE V7, V8 (standard)	ORACLE V7, V8 (standard)
<i>Client/App. Server UNIX</i>	ORACLE V7, V8 (standard)	ORACLE V7, V8 (standard)
<i>Comment</i>		Allows access only to ORACLE V7 on GCOS (see <i>ORACLE Interconnect</i> Subsection)

CLX

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on GCOS7</i>	CLX client for command path	CLX client for command path
<i>Component on OPEN7</i>	SSI : getting CLX commands and sending to ACSLS	
<i>Client/App. Server UNIX</i>	ACSLs server	SSI: getting GCOS commands from socket then local sending to ACSLS
		ACSLs server

see *CLX* Subsection



ISI7

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on GCOS7</i>	ISI7 installation from CD	ISI7 installation from GCOS7 tape
<i>Component on OPEN7</i>	Install on OPEN7 via subux	
<i>Component on DPS 7000/XTA Windows™</i>		ISID: installation on Windows™ via CD
<i>Component on Windows™</i>	CD device	

Also see *Installation* Subsection

OPENGTW

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on GCOS7</i>		SRVGTW : server for GTWRITER requests to sockets
<i>Component on OPEN7</i>	OPENGTW: server for GTWRITER requests to TCP/IP Client shell scripts for report processing	
<i>Component on DPS 7000/XTA Windows™</i>		OPENGTW: server for GTWRITER requests to TCP/IP DOS commands in client scripts for report processing
<i>Comment</i>		Hint: support customer to translate shell scripts into DOS

Also see *OpenGTWriter* Subsection

**GX-RPC Run Time**

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on GCOS7</i>	Client RPC primitive library, SRVRPC: RPC server	
<i>Comment</i>		Supported on NSPR only

GX-RPC Full

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
Client/App. Server UNIX	Client RPC primitive library, SRVRPC: RPC server Generation tool for RPC applications with GCOS	
<i>Comment</i>		Supported on NSPR only

IUM-SA7

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
Components on GCOS7	RPC Server to SA7	RPC Server to SA7
<i>Comment</i>		No change

Also see *Open Master Application* Subsection

TDS TCP/IP via OPEN7

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
Components on Windows™	TDS TCP/IP API	TDS TCP/IP API
Client/App. Server UNIX	TDS TCP/IP API	TDS TCP/IP API

Also see *TDS TCP/IP* Subsection



JTDS (Remote Class)

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
Components on Windows™	TDS classes	TDS classes
Client/App. Server UNIX	TDS classes	TDS classes

Also see *JUFAS / JTDS* Subsection

JUFAS (Remote Class)

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on GCOS7</i>		Tpr for UFAS Concurrent Access Control
Components on Windows™	UFAS classes	UFAS classes
Client/App. Server UNIX	UFAS classes	UFAS classes

Also see *JUFAS / JTDS* Subsection

DA7

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on GCOS7</i>	SQL7	SQL7
<i>Component on OPEN7</i>	OP7GW gateway	
<i>Component on DPS 7000/XTA Windows™</i>		NT7GW gateway
<i>Component on Windows™</i>	DA7NGEN	DA7NGEN
<i>Client/App. Server UNIX</i>	DA7NGEN-X	DA7NGEN-X

Also see *DA7* Subsection



ESP7

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on OPEN7</i>	OP7GW gateway	
<i>Component on DPS 7000/XTA Windows™</i>		NT7GW gateway
<i>Component on Windows™</i>	ESP7NGEN	ESP7NGEN

Also see *ESP7* Subsection

TDS MTS XA

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on Windows™</i>	XA TDS Client	XA TDS Client

Standard migration to a TCP/IP TDS
See *TDS TCP/IP* Subsection

GWEB

	<i>Native DPS 7000</i>	<i>DPS 7000/XTA</i>
<i>Component on Windows or DPS 7000/XTA Windows™</i>	GWEB Package (GWEB Server, Communication Stack)	GWEB Package (GWEB Server, Communication Stack)
Comment	No change, but listed as a non-proprietary piece of software accepted on <i>DPS 7000/XTA Windows</i>	

Also see *GWEB Software* Subsection



OSI/DSA Solutions

The existing following Interop7 OSI/DSA solutions run unchanged on the new platform (through VCP7 and Mainway). See ISO/DSA Network and GCOS7 DSA Applications. Some products are waiting for Marketing decision about support and availability dates:

- UFT
- /HOST7-XCP2
- BEA Host Connect XCP2
- Reverse /HOST7 XCP2
- FlowBus XCP2

Note that BEA Host Connect, Reverse Connect and Flowbus solutions are being migrated from an XCP2 link to a TCP/IP-based link (GTEA), independently of DPS 7000/XTA (see New Products below). The change of visibility is independent of DPS 7000/XTA, but is only due to the use of GTEA.

The existing following Interop7 (OSI/DSA + TCP/IP) solutions run unchanged on the new platform (through VCP7 and Mainway). See ISO/DSA + TCP/IP Networks and GCOS7 DSA Applications.

- AFFINITY/Viplet with Telnet server on Mainway, AIX, NT
- TDS-WEB with HTTP-DSA gateway on Mainway



4.2.3 Installation Summary

Reference: Interop7 User's Guide

4.2.3.1 Installation Overview in TA and XTA Environments

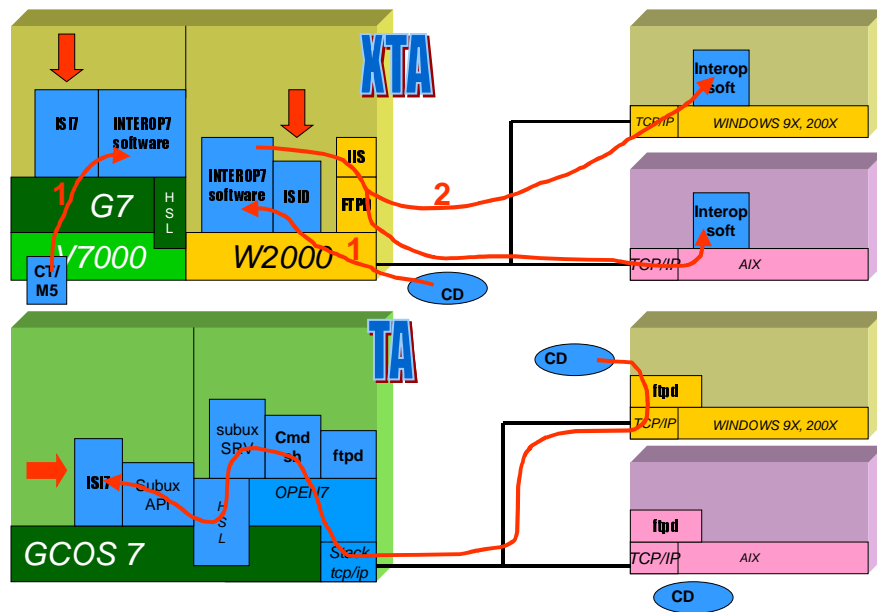


Figure 4-3. Interop7 Installation



4.2.3.2 Software Media Contents for DPS 7000/XTA

Two installation media have to be used to install the complete set of Interoperability solutions for DPS 7000/XTA:

- A tape or cartridge to install products on GCOS7 side. This media is named IDxxx and the procedure remains the same as for ISI7 installation on DPS 7000 platforms. It contains the following products:
 - Interop_basic
 - IUM-SA7 (Access Master to SA7)
 - CLX
 - SQL7
 - FTP7
 - JUFAS (UFAS access with JAVA)
 - OPENGTW
 - ORACLE7
 - SA7
 - SNMP7
- A CD-ROM to install products on the Windows™ side. This media is named IDxxx. It contains the following products:
 - Interop_basic
 - DA7
 - ESP7
 - FTP7
 - JTDS
 - JUFAS
 - OPENGTW
 - TDS TCP/IP API



4.2.3.3 GCOS7 Side Installation (ISI7)

On the DPS 7000/XTA system, the operator has to be connected with "SYSADMIN" access rights (SECADMIN if SECUR'ACCESS is installed).

- When started, ISI7 checks on the installation media if the ISI7 version is more recent than the one installed on GCOS7. In this case, the ISI7 module is updated in the INTEROP_STD environment and asks the user to reconnect.
- ISI7 stops all running interop7 servers.
- ISI7 installs INTEROP7-BASIC and FTP7 products in the directory INTEROP_STD.
- ISI7 asks the operator to modify the current configuration. Current parameters to install and run interoperability products are recorded in a specific configuration file managed by ISI7 itself. For a DPS 7000/XTA evolution, the old configuration file cannot be restored and therefore a new file has to be created. The definition of this file is done by the ISI7 command. CONFIG_PRODUCTS. Refer to the ISI_7 installation manual for more details.
- The operator can select the interoperability products he wants to install. These products are installed in the INTEROP_STD directory or those defined in the configuration file.
- Then ISI7:
 - installs several API's (HSL7API, GXRPC_API, SOCKET_API) in the SYS.DCM.SYSTEM
 - loads the SM H_HSM_DCM in the backing store.
- ISI7 starts the interop7 servers (in INTEROP_STD directory). They will wait until the SOCKG7_STD server is launched on the Windows™ side, then they will wait on their specific port number.
- Then a start order is put in the INTEROP_STD.SLLIB..STARTUP file. It has to be manually included in the GCOS7 Startup. Interoperability servers will be automatically launched at each stop/start of GCOS7.

NOTE:

Installation on the GCOS7 side has to be done before installing the interoperability products on the Windows™ side.



4.2.3.4 Windows™ Side Installation

As said before, all interoperability products are available on a single CD named IDxxx.

Installation is done using a setup.exe (built from InstallShield). The operator has to be connected as a Windows™ administrator (a member of the administrator group).

Each product (except Interop_basic which is a common prerequisite) can be separately installed, stopped or started.

First installation.

The first installation is automatically detected by the absence of the INTEROP_STD environment in the Windows™ registry.

The operator has to enter the Host name, the GCOS name and the drive on which the products will be installed. Then the setup creates the INTEROP_STD environment:

- Create the installation directory (<drive>\ProgramFiles\Bull\Interop7\<GCOS name>\STD).
- Create the key in the Windows™ registry.
- Interop_basic is installed in the INTEROP_STD environment.
- IAM_SERV (Interop7 Administration) is installed as a Windows™ service in the INTEROP_STD environment. This service has in charge to start all interoperability servers associated to selected products.
- Selected products are installed in the INTEROP-STD environment. For each product installed, the corresponding keys are created in the Windows™ registry. The default values set for each product or module can be updated with the Interoperability Administration service.
- A program group named Interop7 administration is created in the Windows™ START – programs – V7000.

At the end of this installation, IAM_SERV is stopped and restarted. All installed servers are automatically started when IAM-SERV starts.



Update/add-on installation

The update/add-on installation mode is automatically detected by the presence of INTEROP_STD environment in the Windows™ registry.

- Installation parameters (drive, GCOS name) are retrieved in the Windows™ registry. The installation job checks if the interoperability environment is active. If it is not active the IAM-SERV is started.

Note: at that time the new Interoperability version is running on the GCOS7 side and interfaces with the old one on the Windows™ side.

Sockets have to be compatible from one version to the following one. If it is not the case, this restriction will be documented in a CSB and the old version of interoperability solution on the Windows™ side will have to be deinstalled before installing the new one (refer to Interoperability Product deinstallation).

- The IAM_SERV stops all servers and itself.
- Selected products are installed or re-installed in the INTEROP-STD environment, **while not selected products are automatically deinstalled**. For each product installed, the corresponding keys are updated in the Windows™ registry.
The default values set for each product or module can be updated with the Interoperability Administration service.
- the Interop7 administration program group is updated in the Windows™ START/program menu.

4.2.3.5 Interoperability Product Uninstallation

Deinstallation of Windows™ interoperability solutions is required when:

- The customer wants to modify the GCOS name of the DPS 7000/XTA system.
- The customer or maintenance people wants to modify the drive letter on which Interop environment is installed (D: instead of E: for example).
- Installation of a new interoperability version and the GCOS7 interfaces of the old and new version are not compatible (documented in the CSB of the new release).

Deinstallation is done using the Add/remove programs icon of the control panel in the Windows™ my computer menu of the DPS 7000/XTA server. The deinstallation can be either selective (a product at a time) or global.

In case of a product deinstallation, only the keys of this product are removed from the Windows™ registry.

In case of a global deinstallation, the INTEROP-STD environment is removed in the Windows™ registry.



The next installation will follow the rules of the first installation.

Deinstallation of Interoperability administration tools removes entries from the Interop7 Administration program group.

4.2.3.6 Product Installation on Remote Servers or Workstations

Each product having the remote loading facility is installed on the DPS 7000/XTA platform in the directory: <drive>:\ProgramFiles\Bull\interop7\<server name>\STD.

They will be remotely accessible through WEB pages located in the directory used by IIS to store its own WEB pages. These WEB pages are built during each Interop product installation (depending on remote station type).

Products which are concerned by this feature are:

- DA7 (file is DA7NGEN_ODBC.exe)
- ESP7 (file is ESP7NGEN.exe)
- Interop7 administration (file is Int7Adm.exe)
- CLX (SSI part) (file is CLX_SSI.tar)
- JUFAS and JTDS classes (file JCLASS7.jar + a number of test files)

These self-extracting modules are based on InstallShield procedures and therefore will be easily installable on the remote server or workstation by an operator having administration privileges.

Specific "snap-ins" to administrate some installed products are also made available on V7000 (in the form of a Web server site), which they can later be loaded from. To be able to activate these "snap-ins" on a Windows™ 2000 remote station, operator has to be known as a member of the V7000 Operators group.



4.2.4 SOCKG7 and SOCKG7 API

SOCKG7 is a socket interconnected between GCOS7 and Windows™, relying on the HSL protocol.

4.2.4.1 SOCKG7 on TA and XTA Platforms

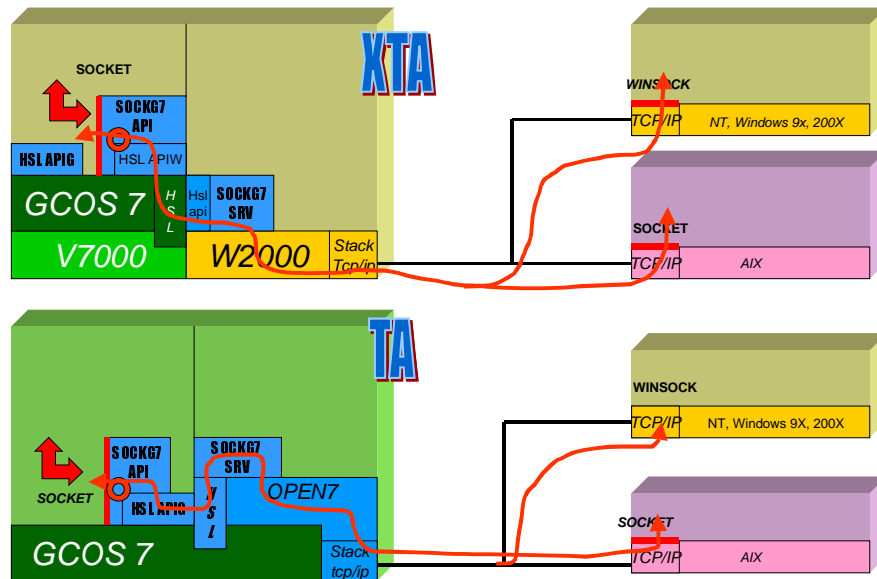


Figure 4-4. SOCKG7

4.2.4.2 Customer Visibility Change

No change but the `hosts` and `services` file updating.

For information, note that there is an API in both GCOS7 and Windows™ on DPS 7000/XTA. Its functionality is the same as the previous SOCKG7 socket interface provided in release I5xxx of Interoperability7 with Open7 V5 and GCOS7-V9.

Regarding DPS 7000/XTA interconnection with Open Systems, the only difference is that SOCKG7 no longer uses Open7 or GXTI, but instead uses Windows™ Winsocket. This means that SOCKG7 provides a direct access to the Windows™ TCP/IP stack.



4.2.5 ISO/DSA Network and GCOS7 DSA Applications Host Connect, Reverse, XCP2, FlowBus, UFT

The following GCOS7 DSA Applications using the following Client/Server middleware links which are running above the ISO/DSA stack of the VCP7, run on DPS 7000/XTA without any change:

- BEA /HOST CONNECT
- XCP1, XCP2
- REVERSE/HOST7
- FLOWBUS
- UFT

The following diagram shows the architecture of the /Host, Reverse /Host or FlowBus applications on DPS 7000/XTA.

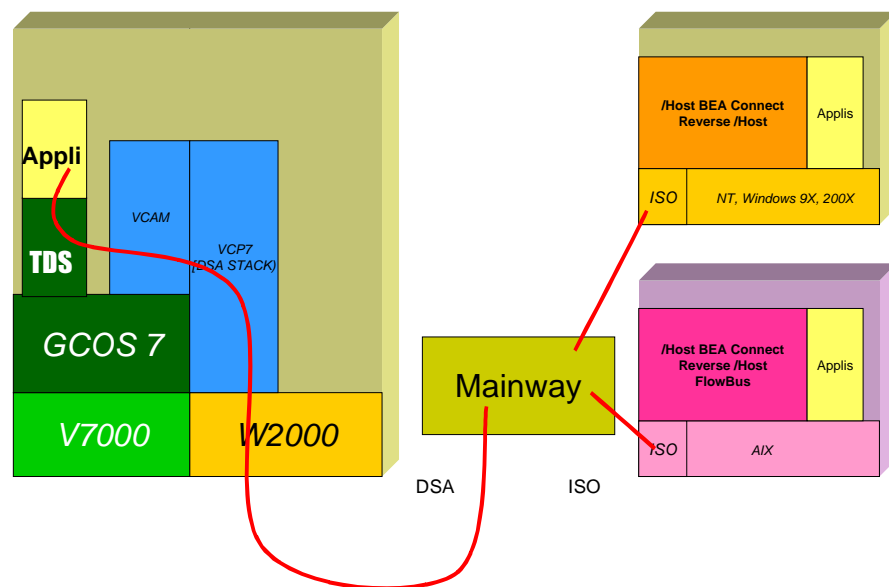


Figure 4-5. /HOST, Reverse /HOST, FlowBus on XTA

4.2.5.1 Customer Visibility Change

No change to applications and configuration files.



4.2.6 ISO/DSA + TCP/IP Networks and GCOS7 DSA Applications

The following GCOS7 DSA applications, accessed through the terminal on Web browser emulations, which are running above the ISO/DSA of the VCP7, run on the DPS 7000/XTA platforms without any change

- AFFINITY with Telnet server on Mainway, AIX, NT, W2000
- Vplet with Telnet server on Mainway, AIX, NT, W2000
- GLINK with Telnet server on Mainway, AIX, NT, W2000
- VTD8
- TDS-WEB with HTTP-DSA gateway on Mainway

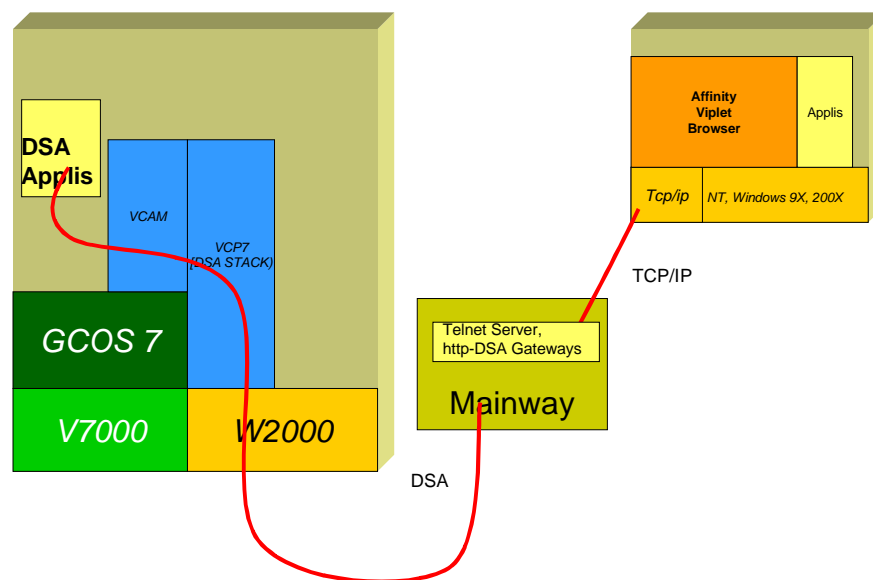


Figure 4-6. Affinity, Vplet, TDS-Web, VTD8

4.2.6.1 Customer Visibility Change

No change to applications and configuration files.



4.2.7 OpenGTWriter

The openGTWriter product offer allows to send printing requests to remote printers or printing systems on a TCP/IP network.

The architecture of the product has been modified between the previous DPS 7000 systems and the new DPS 7000/XTA systems, as shown on the following figure.

On the previous DPS 7000 systems, GTWriter uses the PTQ link to send the printing request to the OpenGTWriter running on OPEN7. The OpenGTWriter SRV executes the associated Unix shell script to process the printing request.

On the new DPS 7000/XTA systems, GTWriter send the printing request to the new OpenGTWriter SRV, running on GCOS7, which in turn uses the SOGKG7 API to send it to the OpenGTWriter SRV running on Window™. The OpenGTWriter SRV executes the associated DOS script to process the printing request.

Seen from the GCOS7 side, there is no change as the GTWriter printing request interface remains unchanged.

Nevertheless, the replacement of the OPEN 7 environment with the Window™ environment implies to convert the Unix shell scripts to the DOS command scripts.

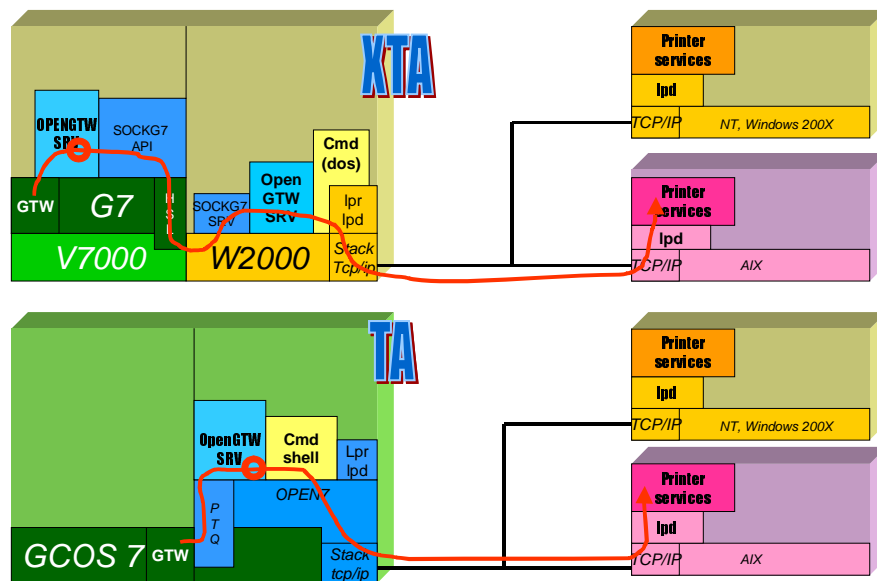


Figure 4-7. OpenGTWriter



4.2.7.1 Customer Visibility Change

A DPS 7000/XTA command file (a .BAT file) is supplied to replace the OPEN7 scripts. Verify that printing works as expected. If it does not, modify the command file to include your specific configuration elements.

Reference: *Interop7 User's Guide*

4.2.7.2 Example

The following is an example of the `opengtw.ini` configuration file (such a file must exist in the same path as the `openGTW.exe` file):

```
[OPENGTW]
DIR_REPORTS=c:\Interop7\ka4c\STD\OpenGTW\Reports

[PRINTER000]
NAME=JPM
SERVER=frcls9645
PRINTER=HPLaserJ
KEEP=NO
BANNER=YES
POSTSCRIPT=NO

[PRINTER001]
NAME=XSEPT
SERVER=terminator
PRINTER=qlxprint
KEEP=NO
BANNER=YES
POSTSCRIPT=NO

[PRINTER002]
NAME=WSEPT
SERVER=terminator
PRINTER=qlwprint
KEEP=NO
BANNER=YES
POSTSCRIPT=NO
```



4.2.8 FTP Applications

The Open7 FTP client and server have been ported on Windows™.

The GCL procedure that was used on the previous DPS 7000 systems to call the Open7 FTP client, now calls the DPS 7000/XTA FTP client through RPC.

Summary of Changes

- Default port is 9037 (instead of 21 or 99).
- 20 simultaneous FTP transfers are supported thanks to SRVFTP.
- FTP 7 administration :
 - On GCOS7 with SRVFTP
 - On Windows™ with Interop7 Snap-in.
- All types of library members are supported.
- UFAS sequential file can be created by giving allocation options (such as media, size, csize ...) using the *quote gcmd* FTP 7 command.
- *cputog* command has been improved to be used on UNIX:
 - available after Interop7_Basic has been installed in the Interop7 directory
 - on UNIX, transfer it from DPS 7000/XTA and create a link for *cpgtou* (*ln cputog cpgtou*); entered command is automatically identified.
- Two files are provided for customer translation table (ASCII to EBCDIC and EBCDIC to ASCII) in the folder
\\ProgramFiles\\Bull\\Interop7\\<GCOS7_IP_name>\\STD. They can be modified with an editor.



4.2.8.1 FTP Server

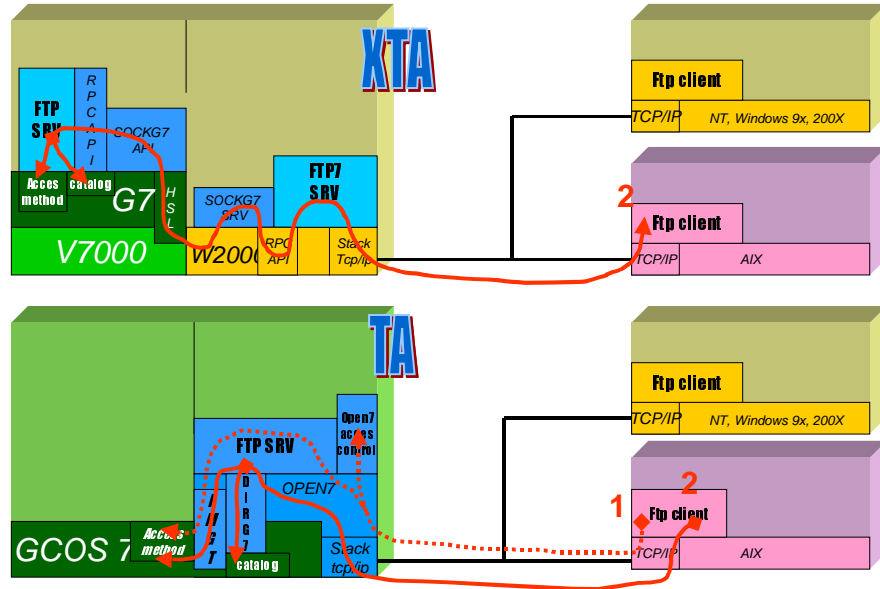


Figure 4-8. FTP Server

Customer Visibility Change

- FTP with GCOS7 access control: this functionality is supported. The « dirg7 » syntax is compatible with the former OPEN7 syntax.
- The access control based on the former OPEN7 /etc/passwd is no longer supported for Windows files, use the standard Microsoft FTP.
- FTP with access control and use of the # option in the command line is no longer supported. Customers have to modify their syntax and use « dirg7 » instead of #: The # parameter in *put* and *get* commands must be replaced by UNIX-like and basic FTP commands (*cd*, *dir*, *get*, *ls*, *mget*, *mput*, *put*, *pwd*, *user*).



EXAMPLE 1

The following syntax on OPEN 7:

```
ftp <open7> (OPEN 7 user & password)
put /jpm/essai #jpm.sllib,user=marinier,password=xx,subf=essai
```

or for UFAS

```
put /jpm/essai #jpm.ufas,user=marinier,password=xx,type=ufas
```

becomes on DPS 7000/XTA:

```
ftp <dps> 9037 (GCOS7 user prefixed by /G7/ & password)
put /jpm/essai /jpm/sllib/essai
```

or for UFAS

```
put /jpm/essai /jpm/ufas
```

EXAMPLE 2

Change the LHS code to the RHS code. Keep the central code:

HOST =open7	HOST =xta
PORT =21	PORT =9037
USER ="user usrop passop"	USER ="user /G7/USRG/PROJG PASSG"
PARAM_CMD =	PARAM_CMD ="quote gcmd format=sarf"
TRANSF_CMD =	TRANSF_CMD =
"put file #DIR.SLLIB,	"put file /DIR/SLLIB/MEMB"
subf=MEMB,format=sarf"	
(
echo "open \$HOST \$PORT"	
echo "\$USER"	
echo "\$PARAM_CMD"	
echo "\$TRANSF_CMD"	
echo "close"	
) ftp -vni > /tmp/trace 2>&1	

□

NOTE

Since FTP 7 V3.5.0, a trace is available in the ftp7d server to know all users using the # convention when accessing GCOS7 files. Activate this facility in preparation of your platform migration.



4.2.8.2 FTP Client

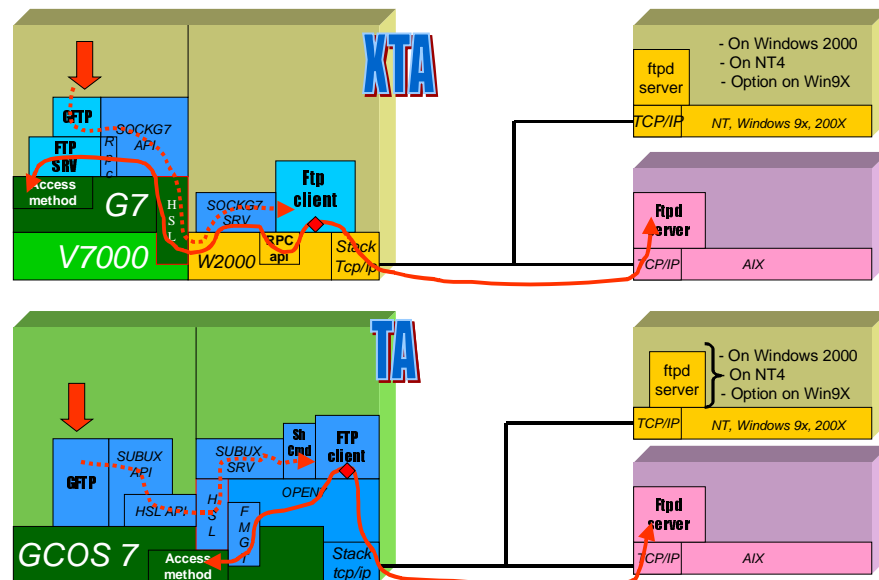


Figure 4-9. FTP Client

Customer Visibility Change

- The GCL procedure to activate the FTP client is unchanged.
- The access control based on the former OPEN7 /etc/passwd is no longer supported for Windows files, use standard Microsoft FTP.
- FTP with GCOS7 access control: this functionality is supported. The « dirg7 » syntax is compatible with the former OPEN7 syntax.



4.2.9 ORACLE Interconnect

4.2.9.1 Access to a GCOS7 Local ORACLE Database

DPS 7000/XTA GCOS7 supports an Oracle V7 client and server, with an ORACLE local database.

Access to the database from a Remote Client (on a separate platform) is performed through SQL*Net V2 as usual.

Customer Visibility Change

No change.



4.2.9.2 GCOS7 Access to an ORACLE Database on a Remote Server

Use CMA as usual. Remote Database can be ORACLE V7 or V8.

Note that the "accelerated CMA" internal option is useless in the XTA context, due to the new architecture.

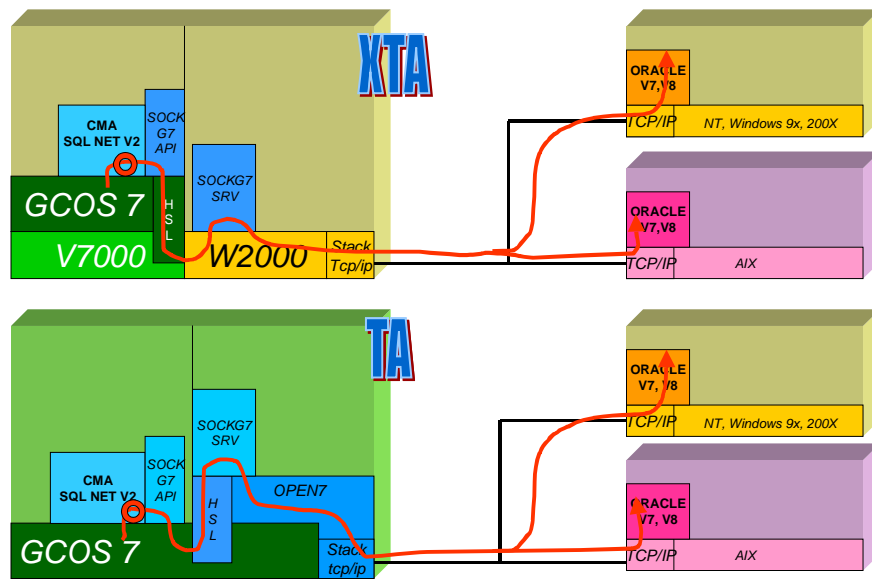


Figure 4-10. ORACLE-CMA

Customer Visibility Change

No change.

4.2.9.3 Access to a Windows™ Local ORACLE Database

Oracle is not supported on the DPS 7000/XTA Windows™ partition. Access from GCOS7 to a local Oracle database, running on the DPS 7000/XTA Windows™ partition, will be available on the next release .



4.2.10 Open Master Application for DPS 7000/XTA

4.2.10.1 Common SNMP Administration

The SNMP administration provided by Open Master generic applications uses SNMP agents on the administrated systems.

GCOS7 and Windows™ have each an SNMP agent. They allow to provide a uniform view of the SNMP attributes of the DPS 7000/XTA two OS's.

All these products already run on GCOS7 and Windows™ undependant systems, and will run on DPS 7000/XTA two OS's.

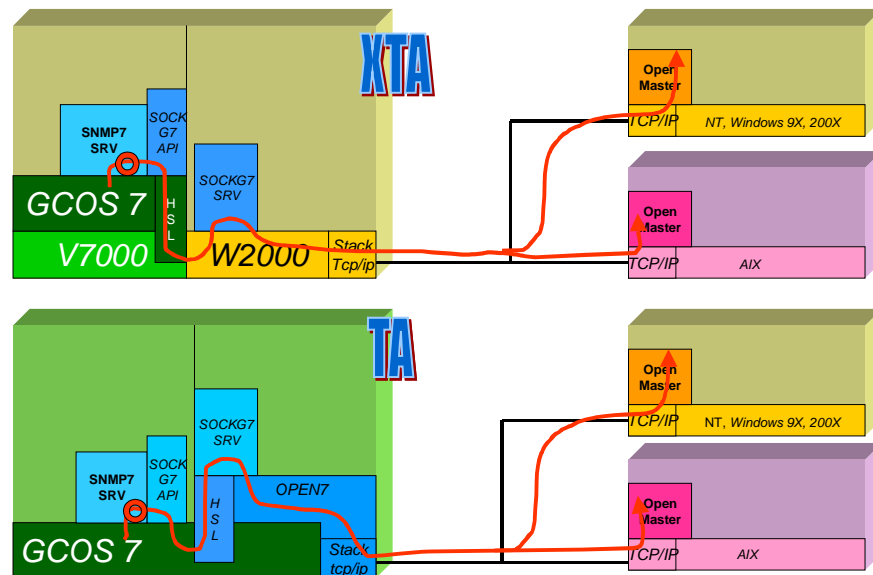


Figure 4-11. SNMP7 Administration

Customer Visibility Change

No change.



4.2.10.2 Uniform User Management and Security

IUM (Integrated User Management) on Open Master provides a centralized registration of GCOS7 and Windows™, and therefore a uniform user management for DPS 7000/XTA.

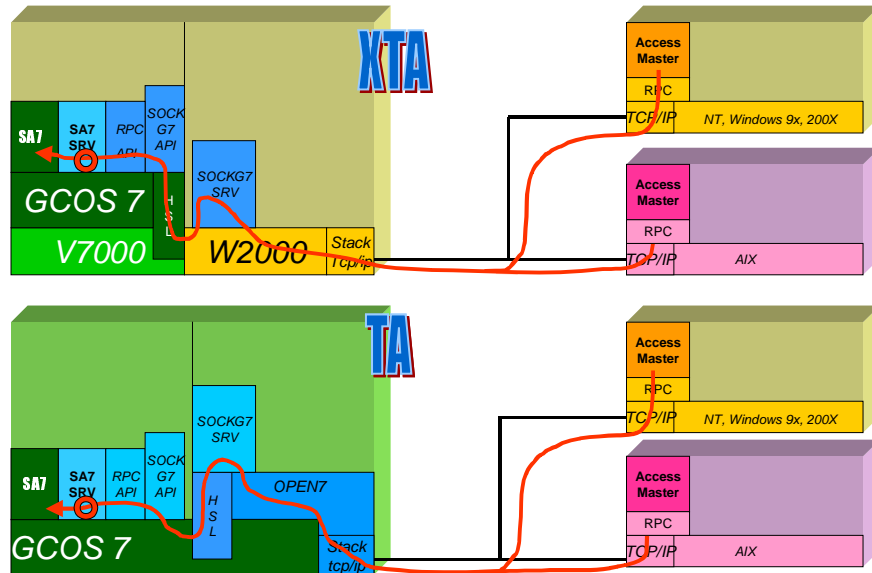


Figure 4-12. IUM-SA7

SA7 is linked to Access Master in order to provide a secured connection from user PC's.

Customer Visibility Change

No change.



4.2.11 Interop7 SUBUX

Recall: SUBUX is a GCOS7 command used for submitting a UNIX command to a remote Unix host.

On DPS 7000/XTA, the SUBUX function uses the rexec protocol on TCP/IP sockets, with a rexecd daemon running on all remote standard UNIX platforms.

4.2.11.1 Diagram

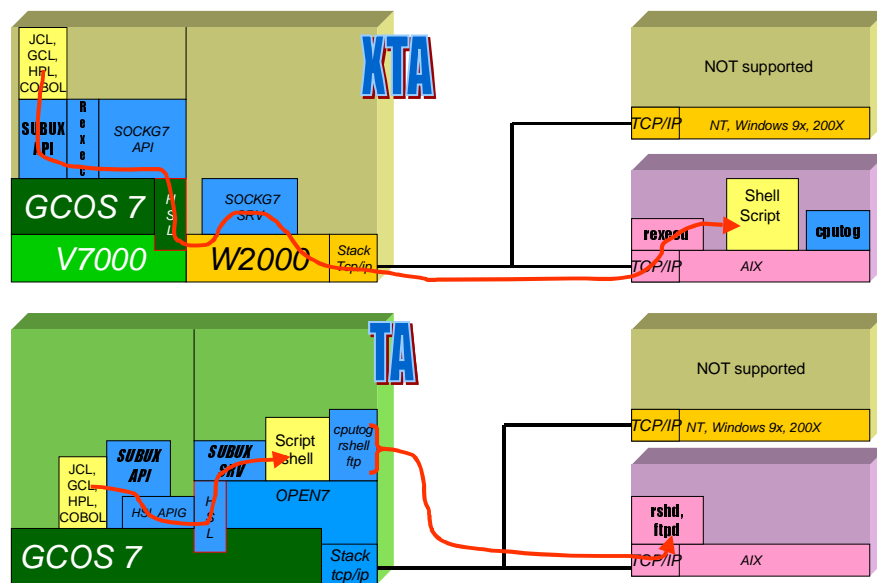


Figure 4-13. Subux



4.2.11.2 Customer Visibility Change

The SUBMIT_UNIX GCL command has been improved to specify the remote host name:

- Either with the REMOTE_HOST parameter
- Or through a new global parameter : G_REMOTE_HOST

EXAMPLE:

Suppose that to run with the rexec protocol, you chose to add one JCL line to initialize the HOST global parameter:

```
VL RHOST='remote_host_name' ;
LMN SL COMFILE=*LMNCOM;
$INPUT LMNCOM PRINT JVALUES;
GLOBAL G_REMOTE_HOST;
LET G_REMOTE_HOST &RHOST;
$ENDINPUT;
```



On DPS 7000/XTA, the SUBUX function uses the rexec protocol on TCP/IP sockets, with a rexecd daemon running on all remote standard UNIX platforms.

On DPS 7000/XTA, the SUBUX function uses the rexec protocol on TCP/IP sockets, with a rexecd daemon running on all remote standard UNIX platforms.



4.2.13 Interop7 CLX

4.2.13.1 Diagram

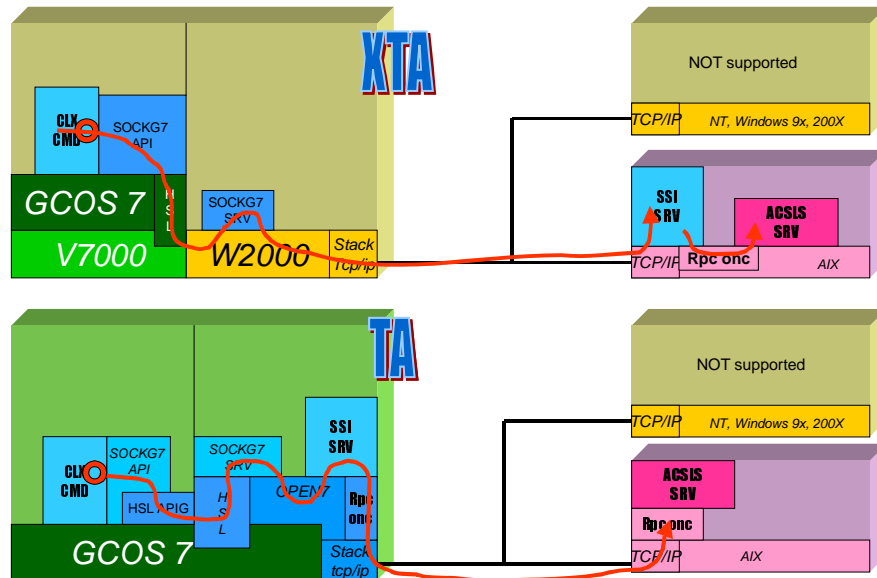


Figure 4-15. CLX

4.2.13.2 Customer Visibility Change

With Open7, CLX ran in 3-tier mode (GCOS7, OPEN7, UNIX), while it now runs in 2-tier mode (GCOS7, UNIX/ACSL): the SSI OPEN 7 component has indeed been ported on the ACSLSUNIX server. It is advised to install the remote components on the ACSLS server through FTP, as no browser is normally available with the ACSLS server (see Installation on Remote Station).

CLX commands on GCOS7 are unchanged. They use the new SUBUX command. New GCOS7 parameters are available for the ACSLS host_name (GCOS7 configuration file). Some UNIX/ACSL configuration parameters must be updated.

An ACSLS server can support several DPS 7000. DPS 7000/TA and XTA systems can coexist.

To connect several DPS 7000/XTA platforms to the same library, you must assign a different port number to each DPS 7000 system.



4.2.14 Interop7 DA7

4.2.14.1 Diagram

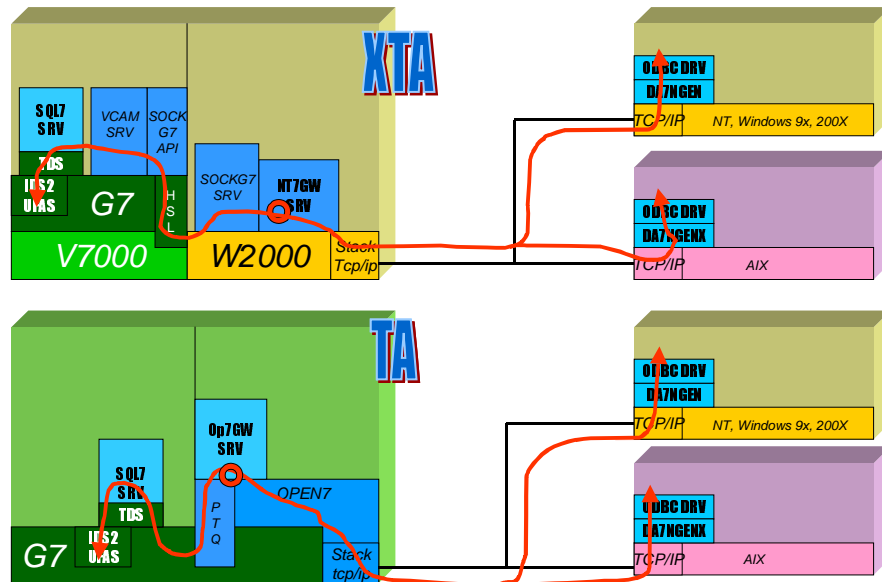


Figure 4-16. DA7

4.2.14.2 Customer Visibility Change

No change if the TDS SQL7 stays in DSA mode.

The TDS SQL7 can also run as a TDS TCP/IP (new functionality, with no VCAM Server involved on GCOS7). Moving to this environment requires nothing but regenerating the TDS SQL7 in TCP/IP mode.

For an information summary about how to use TCP/IP access with DA7, refer to Interop7 JTDS - Customer Visibility Change.



4.2.15 Interop7 ESP7

4.2.15.1 Diagram

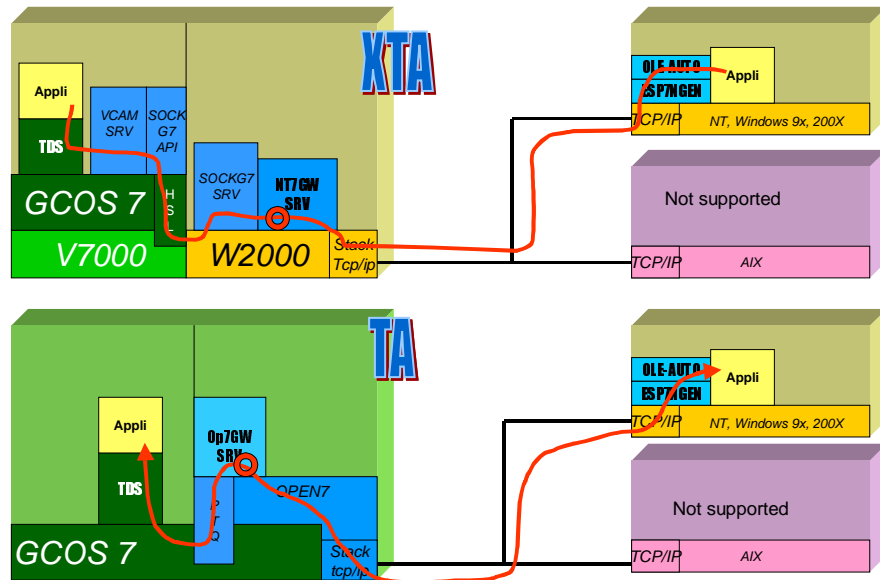


Figure 4-17. ESP7

4.2.15.2 Customer Visibility Change

No change if the TDS application with the ESP transactions stays in DSA mode.

The TDS application can also run as a TDS TCP/IP (with no VCAM Server involved on GCOS7). Moving to this environment requires nothing but regenerating the TDS in TCP/IP mode.

For an information summary about how to use TCP/IP access with ESP7, refer to Interop7 JTDS - Customer Visibility Change.



4.2.16 Interop7 TDS TCP/IP

4.2.16.1 Diagram

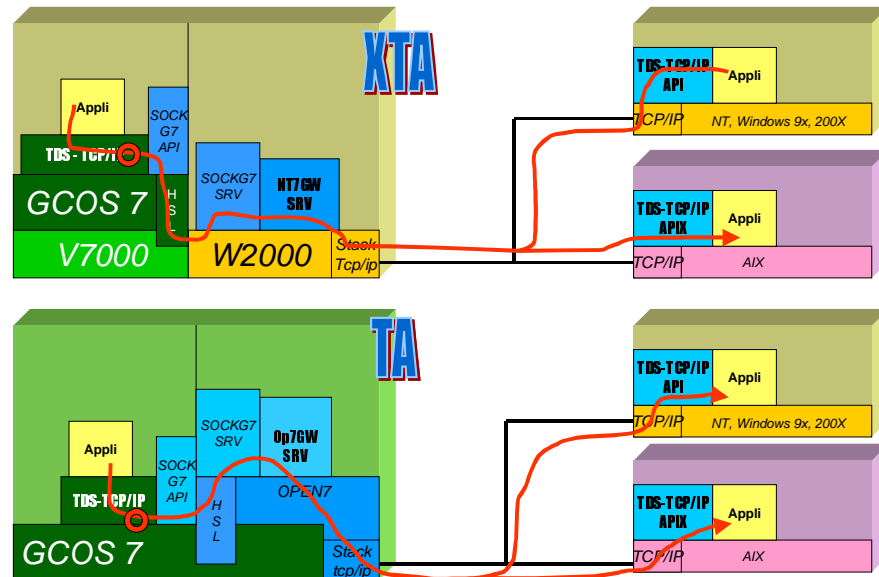


Figure 4-18. TDS TCP/IP

NOTE

TDS TCP/IP supports both a TCP/IP access (for instance for Interop7), and a DSA access for terminal access.

4.2.16.2 Customer Visibility Change

Your TDS TCP/IP was previously generated in GXTI mode or in Socket mode. You must regenerate it on DPS 7000/XTA as explained in the TDS TCP/IP User's Guide.

Connecting information that was previously supplied in the OPEN7 `etc/hosts` and `etc/services` files (in Socket mode) must now to be provided in the Windows™ corresponding services files

Note that your TDS in VCAM mode must to be generated anyway against the GCOS7 new technical status.



4.2.17 Interop7 JUFAS / JTDS

4.2.17.1 Diagram

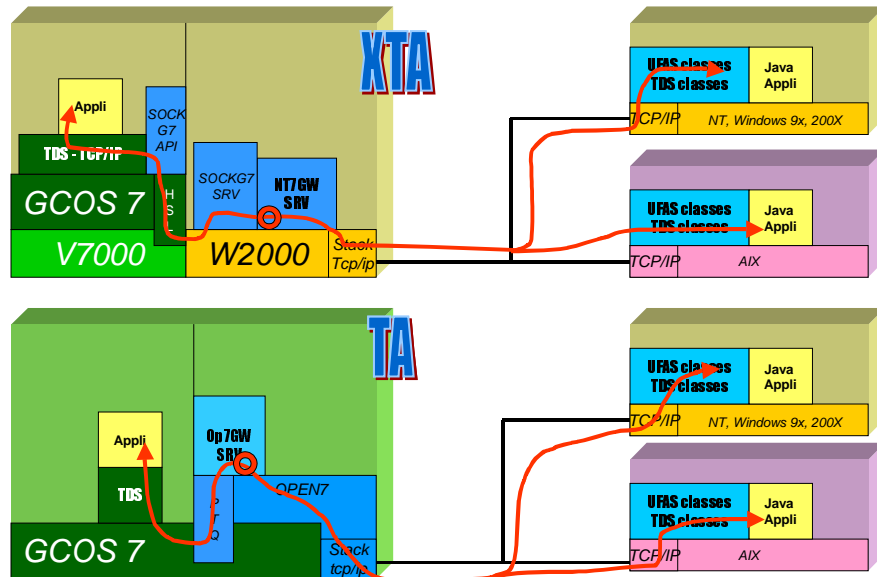


Figure 4-19. JUFAS / JTDS

NOTE

Thanks to the connection facility provide by the VCAM, Java remote client applications can also access a TDS DSA as previously, in addition to TDS TCP/IP.

4.2.17.2 Customer Visibility Change

The TDS application, accessed through th remote JUFAS/JTDS Java classes, undergo no change when moving to the new DPS 7000/XTA systems. Indeed, the porting of the underlying JUFAS/JTDS interoperability link on the new DPS 7000/XTA systems, has kept the interface to GCOS7 applications unchanged.

Although, the TDS applications remain unmodified, the change of the environment supporting the interoperability from OPEN 7 to the Windows™ implies to adapt the interoperability configuration data.



If the TDS application stay in DSA access mode, when moved to the new DPS 7000/XTA systems, one must add the solution configuration data to the WindowsTM services files.

If the TDS applications switch to the TCP/IP access mode, when moved to the new DPS 7000/XTA systems, one must:

- Regenerate the TDS applications in TCP/IP access mode
- Update the WindowsTM services files, with the solution configuration data

Changing the access mode to TCP/IP implies to:

- Modify his TDS generation (TDS TCP/IP like) by adding in STDS:

TCP-IP PROTOCOL

ATTACH SHARABLE MODULE H_SM_DCM

- Modify services file in WindowsTM 2000 by adding:

- <Windows_system_name><mailbox> <free_port_number>/tcp
- <GCOS7_system_name><mailbox> <free_port_number>/tcp

e.g. SUPPORT7ESP7 9888/tcp
 KA4CESP7 9888/tcp

4.2.18 GWEB Software

4.2.18.1 Overview

GWEB is a software product from Bull partner G&R (Gallagher & Robertson), that allows client workstations equipped with Web browsers to connect to TDS applications and execute transactions.

The main function of GWEB is to convert TDS host messages (forms mode) into HTML pages that are the standard presentation used on Web browsers. Therefore GWEB allows to convert to unchanged TDS applications from universal Internet-Ready client workstations supporting the standard HTML presentation.

GWEB is available on separate Unix, WindowsTM and Linux servers, and is new ported on the WindowsTM system partition of the new DPS 7000/XTA systems.



4.2.18.2 GWEB on DPS 7000/XTA

The GWEB software ported on the DPS 7000/XTA systems uses a DSA session on RFC1006, to connect to the TDS application through the VCP7.

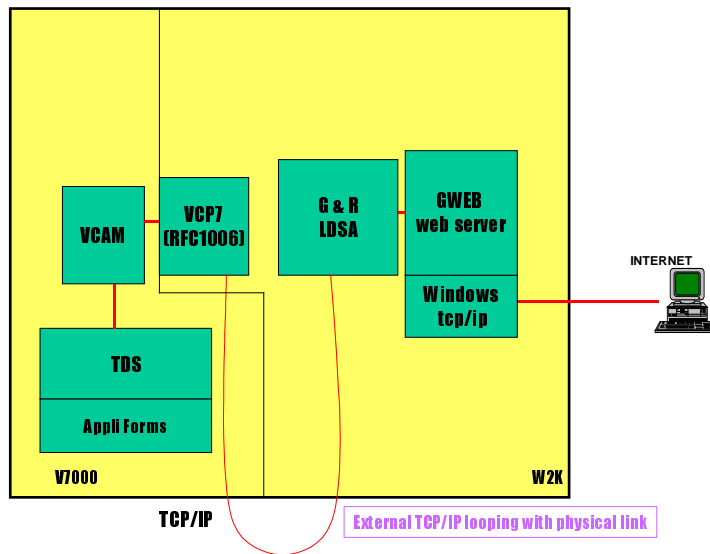


Figure 4-20. GWEB in TCP/IP Configuration

4.2.18.3 Customer Visibility Change

From the GCOS7 TDS applications, the visibility of the Gweb product, whether it is running on a separate server (Unix, Windows™, Linux) or on the new DPS 7000/XTA systems, remain unchanged.

4.2.19 TNVIP Server on DPS 7000/XTA

It is now possible to have TNVIP server located on the windows side of Diane. It is accessed via GTEA using the TCP/IP stack.



4.3 Telecommunication Solution Evolution

DPS 7000/XTA ISO/DSA native telecommunications are supported by the VCP7. It is accessed from GCOS7 via channel programs and it executes those channel programs as did the DPS 7000 & FCP7. It provides ISO/DSA telecommunications which can themselves connect to a Mainway, Datanet, UNIX server, ...

DPS 7000/XTA TCP/IP telecommunications are the native ones of Windows™. Windows™ interface is based on the Winsocket, and they are accessed from GCOS7 via SOCKG7 component.

Access from VCP7 to the network is realized via up to two Ethernet adapters (either mono or dual ports) supporting 10/100 Mb/s.

RFC1006 connections providing ISO/DSA telecommunications over a TCP/IP network are also supported by VCP7 (specifically for GWEB on DPS 7000/XTA).

However, as FCP7, VCP7 contains two communications stacks:

- OSI stack (containing OSI layers 1 to 4)
- IPS stack (containing TCP, UDP and IP layers)

The OSI stack allows the use of an ISO transport (layer 4) over either a Full Internet (layer 3) or Null Internet (layer 3). The OSI stack is also referred to as the OSI/DIWS stack.

The RFC1006 layer allows OSI/DIWS sessions to be run over the IPS stack of OCS Front End.

4.3.1 Hardware Controller Reconnection

4.3.1.1 Communication Processors for DPS7000/XTA

Standard MainWay communication processors can be reconnected to the XTA series.

In addition, a new communication processor is made available for the DPS 7000/XTA series: it is the MainWay 2600 LE model. The objective of this new offer is to replace the low-cost CNP7/CNS A2 offer for the DPS7000 Low Range systems migrating to DPS 7000/XTA Low range models. This offer may also replace the Datanet 7500 Entry models (7500/10). The MainWay LE has no Service Processor (from which the standard MainWay is administrated): the administration (sysgen, load, dump) is done from the XTA platform.



These MainWay 2600LE Packs provide the functional level supported by CNP7/CNS A2 (OSI/DSA, X21/X25 and BSC supports):

- Reconnection of dumb terminals
- Support of PCs with emulation SW
- Same functional level for DSA/SNA support with a greater hardware configurability and performance.

The following options are not available on the MainWay 2600LE:

- -In line Generation Processor,
- -second WNP for back-up
- -High Speed Line Adapters
- -Medium Speed Line Adapters with RS530 interface
- -Line Module Redundant power supply
- -Back-up Service Processor.

A MainWay model is not upgradable to the MainWay 2600 entry models.

4.3.1.2 Connection of MainWay LE to DPS7000/XTA

MainWay 2600LE is connected to the DPS7000/XTA platform through MainWay (Re) Connection kits available in the DPS 7000/XTA series offer. These kits ship with the necessary RJ45/RJ45 cable(s).

The MainWay LE is connected to the DPS 7000/XTA platform either through two 10/100 Mbps Ethernet Adapters (**two (re)connection kits CPFD068-0000 are needed**) or through one dual port Ethernet Adapter (**one (re)connection kit CPFD070-0000 is needed**). The first adapter is used for the data transfers that are managed by one VCP7 (Virtual Communication Processor 7), and the second adapter is used for the MainWay LE administration that is managed by the GCOS7 administrative FECM Server resting on the TNS Server and the VLCT (Virtual LAN Controller) to support the administrative dialog.



4.3.2 Impact on Network Generation

4.3.2.1 VCP7 Configuration

The VCP7 configuration is similar to the FCP7 configuration. The configuration subfiles of the SYS.DSACONF library can be reused.

Attached to each VCP7, the subfiles contain command lines allowing the configuration of both IPS and OSI/DIWS stacks. Each stack has a separate configuration subfile (see examples, next paragraph).

The GO order in the scenario subfile gives the name(s) of the configuration subfile(s). The "CONF" prefix of the name given in the GO order is removed to derive the subfile name.

The IPS stack has to be configured only in the following cases:

- The customer had already an IPS configuration on his (or her) initial DPS7000.
- The GWEB product is used.

Note that the IP address of a VCP7 must be always different from the IP address of the Windows stack. On the contrary, most DPS 7000/XTA Interop7 solutions use the standard TCP/IP stack (Winsock) with its own IP address and must not refer to the IP addresses of VCP7's.

Particularly, check the IP addresses of VCP7's that are specified in the following commands of the network configuration:

- LTS_INET,
- NRTS,
- IFCONFIG

(see examples below).



4.3.2.2 Examples

Hereafter are displayed some members of the SYS.DSACONF file, that are required for telecommunications and must be supplied by the user.

The STD_SCEN member is used when VCP7 starts, it references 2 other members (ISO_EA01 and IPS_EA01) used for the VCP7 configuration, and the TSLNCC member that contains the VCP default version name.

In this example, there is only one telecom board and it is on 1UC00.

Both other members (KA1C_BASIC and KA1C_INCR) are used to generate the network description. Information in this example would allow to declare a MATHILDE printer that is accessed through GTWRITER.

STD_SCEN member

```
NODE EA01  START  -VERSION D000
*
SCEN START
LOAD
GO -OSI CONFISO_EA01 -IPS CONFIPS_EA01 -REPORT CONFEA01_CONF_RPRT
*
SCEN RESTART
DUMP
LOAD
GO -OSI CONFISO_EA01 -IPS CONFIPS_EA01 -REPORT CONFEA01_CONF_RPRT
*
SCEN TEST
LOAD
GO -OSI CONFOSI_EA01 -IPS CONFIPS_EA01
*
SCEN DUMP
DUMP
*
```

TSLNCC member

```
D000
```



KA1C_BASIC member (basic part of the NETGEN generation)

```
NETWORK KA1C ,QMBLKSZ=100,QMPOOL=100,MAMSIMU=3,GENQMON=1;
LSYS KA1C PF='DPS7/GCOS-7/V9';
LSC NAME=KA1C SCID=176:028;
SVR OCS1 TYPE=OCS LCT=EA01 BUFNB=(32768,32768) BUFSZ=256;
LCT EA01 TYPE=NCC IADDR=00-90-27-E5-90-9E MAXCN=4000 WATCH=0;

RSYS KA4F RSC=KA4F PF='DPS7/GCOS-7/V9';
RSC NAME=KA4F SCID=176:079 SERVER=OCS1 PROTOCOL=DSA200;
RSYS KA11 RSC=KA11 PF='DPS7/GCOS-7/V9';
RSC NAME=KA11 SCID=176:017 SERVER=OCS1 PROTOCOL=DSA200;
RSYS NAME = KA4E , RSC = KA4E , PROFILE = 'DPS7/GCOS-7/V9' ;
RSC NAME = KA4E SCID = 176:078 , SERVER = (OCS1), PROTOCOL =DSA200 ;
RSYS NAME=BC0E RSC=BC0E PF='DPS7/GCOS-7/V9';
RSC NAME=BC0E SCID=065:014 SERVER=OCS1 PROTOCOL=DSA200;

RSYS NAME=BY04 RSC=BY04 PF='DPS7/GCOS-7/V9';
RSC NAME=BY04 SCID=081:004 SVR=OCS1 PROTOCOL=DSA200;

RSYS NAME=BY07 RSC=BY07 PF='DPS7/GCOS-7/V9';
RSC NAME=BY07 SCID=81:007 SVR=OCS1 PROTOCOL=DSA200;
RSYS NAME=BY0F RSC=BY0F PF='DPS7/GCOS-7/V9';
RSC NAME=BY0F SCID=081:015 SERVER=OCS1 PROTOCOL=DSA200;

RSYS BY22 RSC = BY22 PROFILE = 'DN7100/DN-C/V4.1' ;
RSC BY22 SCID = 81:034 SERVER=(OCS1);

COMM '-----' ;
RSYS NAME = BC14 RSC = BC14 PROFILE = 'MW2000/DNS-E/V1' ;
RSC NAME = BC14 SCID = 065:020 SERVER = (OCS1);
SR RSC = BC14 SVR = (OCS1) QUOTA = 1 ;
RSYS NAME = BC15 RSC = BC15 PROFILE = 'MW2000/DNS-E/V1' ;
RSC NAME = BC15 SCID = 065:021 SERVER = (OCS1);
SR RSC = BC15 SVR = (OCS1) QUOTA = 1 ;

RSYS NAME = BYB8 RSC = BYB8 PROFILE = 'MW2000/DNS-E/V1' ;
RSC NAME = BYB8 SCID = 081:184 SERVER = (OCS1);
SR RSC = BYB8 SVR = (OCS1) QUOTA = 1 ;

COMM `----- MATHILDE 6090 -----`
RSYS MATH RSC = MATH PROFILE = 'DN7100' TYPE=PT ADDR=ISO ;
RSC MATH SCID = 81:127 SERVER = OCS1 ADDR=ISO NSAP=39250F000000081127
PROTOCOL=ISO;

RSYS KA38 RSC = KA38 PF = 'STID/ISO/SID3';
RSC KA38 SCID = 176:056 SVR = (OCS1) PRTC = SID ;
SR RSC=KA38 SVR=OCS1 QUOTA=1;
ENET KA1C;
```

**KA1C_INCR member**

(incremental part of the NETGEN generation, required for the MATHILDE 6090 printer)

```
DIR KA1C;
SDOM MATH6090 PT=EA01 PFX=39250F;
EDIR;
```

ISO_EA01 member

```
#OSI_EA01 GCOS7
NLOC NAME= OCS1 LNSAP=39250F009027E5909E

#LINK VCPI//VCPI
TCIVMO NAME=VCPI TPUSIZE=1024 MAXRCRDT=14 MAXSCRDT=14 MAXRETRY=2
      T1TIME=10000 WTIME=60000 ITIME=180000 ACKTIME=5000

#LINK VCPI/FDDI
TCIVMO NAME=FDDI TPUSIZE=4096 MAXRCRDT=14 MAXSCRDT=14 MAXRETRY=2
      T1TIME=10000 WTIME=60000 ITIME=180000 ACKTIME=5000

#LINK VCPI/LAN/DNS
TCIVMO NAME=LAN/DNS TPUSIZE=1024 MAXRCRDT=7 MAXSCRDT=7 MAXRETRY=2
      T1TIME=2000 WTIME=30000 ITIME=60000 ACKTIME=2000

#LINK VCPI/LAN/DPX
TCIVMO NAME=LAN/DPX TPUSIZE=1024 MAXRCRDT=3 MAXSCRDT=3 MAXRETRY=2
      T1TIME=40000 WTIME=20000 ITIME=180000
TCIVMO NAME=IVMO-MAT TPUSIZE=1024 MAXRCRDT=4 MAXSCRDT=4 MAXRETRY=3
      T1TIME=10000 WTIME=60000 ITIME=180000

#DECLARATION RFC1006
LTS_INET NAME=LTSKA1C IP_ADD=129.182.79.100 MAXTC=1050 TPUSIZE=1024

NRSC NAME=BC0E NRTS=BC0E
NRTS NAME=BC0E TYPE=DIWS IVMO=VCPI MACADR=080038100FF9
NRSC NAME=BY0F NRTS=1Y0F,2Y0F,3Y0F,4Y0F
NRTS NAME=1Y0F TYPE=DIWS IVMO=VCPI MACADR=08003852510F
NRTS NAME=2Y0F TYPE=DIWS IVMO=VCPI MACADR=080038100FF2
NRTS NAME=3Y0F TYPE=DIWS IVMO=VCPI MACADR=080038100FFD
NRTS NAME=4Y0F TYPE=DIWS IVMO=VCPI MACADR=080038525127
NRSC NAME=BY22 NRTS=BY22
NRTS NAME=BY22 TYPE=DIWS IVMO=LAN/DNS MACADR=080038595122
NRSC NAME=BY04 NRTS=BY04,2Y04
NRTS NAME=BY04 TYPE=INET IP_ADD=172.31.32.15
INET_RT RNSAP=39250F080038100FF3 IP_ADD=172.31.32.15
NRTS NAME=2Y04 TYPE=INET IP_ADD=172.31.32.26
INET_RT RNSAP=39250F080038100081 IP_ADD=172.31.32.26
NRSC NAME=BY07 NRTS=BY07
NRTS NAME=BY07 TYPE=INET IP_ADD=172.31.32.34
INET_RT RNSAP=39250F080038100FF4 IP_ADD=172.31.32.34
```



```
NRSC NAME=KA4E NRTS=KA4E
NRTS NAME=KA4E TYPE=INET IP_ADD=129.182.79.101
INET_RT RNSAP=39250F009027B14EEA IP_ADD=129.182.79.101
NRSC NAME=KA4F NRTS=KA4F
NRTS NAME=KA4F TYPE=DIWS IVMO=VCPI MACADR=009027FDC58C
NRSC NAME=KA11 NRTS=KA11
NRTS NAME=KA11 TYPE=DIWS IVMO=VCPI MACADR=009027C2C4B0

NRSC NAME=BC14 NRTS=BC14
NRTS NAME=BC14 TYPE=DIWS IVMO=LAN/DNS MACADR=0800381100CF
NRSC NAME=BC15 NRTS=BC15
NRTS NAME=BC15 TYPE=DIWS IVMO=LAN/DNS MACADR=08003811003F
NRSC NAME=BYB8 NRTS=BYB8
NRTS NAME=BYB8 TYPE=DIWS IVMO=LAN/DNS MACADR=080038110048

NRSC NAME=MATH NRTS=MATH
NRTS NAME=MATH TYPE=DIWS IVMO=IVMO-MAT MACADR=080038600000
NSDOM NAME=MATH NSAP_PRF=39250F NRTS=MATH

NRSC NAME=KA38 NRTS=KA38
NRTS NAME=KA38 TYPE=DIWS IVMO=VCPI MACADR=08005A1D22E5
```

IPS_EA01 member

```
# OSI_EA01 DU 15.04.00
IFCONFIG FD0 INET IPDSTAD 129.182.79.100 ARP TRAILERS
IFCONFIG LO0 INET IPDSTAD 127.0.0.1
ROUTE ADD NET 129.182.9 129.182.79.200 1
ROUTE ADD NET 172.31.32 129.182.79.200 1
```



4.4 Solution Migration Service Offer

Insert here the different services to help the customer to migrate his production, for example:

- JCL/GCL modification
- System optimization
- New production measurements
- Tune the new platform
- Etc ...



A. Printer Configurations

A.1 Configuration Parameters for PR800n/PR900n

PR800n and PR900n are printers PR800 and PR900 without IGP board

DPU	V1.00R	02-May-95	#153937
RSP/CCB	V1.01A	27-Jan-95	#153339
RTP/BUL/CCB	V1.00C	09-Mar-95	#153718
PFC/STD	V1.03D	13-Mar-95	#153781
FONT	V1.00D	21-Jul-94	#152644

Print Statistics

Power-on Time	XXXXX.X hours
Print Time	YYYYY.Y hours
Shuttle Strokes	AAAAAAAAAAAA
Print Lines	BBBBBBBBBBBB
Print Pages	CCCCCCCCCC
Phase Adjustment	DDD
Configuration	X

Ribbon Life

Job Rate	Currently 150
Ribbon Size	Currently 60
When Worn Action	To Stop Printer
Enable/Disable	Disable Action

Font

Font	DP AT 10 CPI
------	--------------



Character Set

Select Set	ISO 8859
Select Subset	ISO 8859-1(Menu : « Extended Select Language »)
Select Language	ASCII (Menu : « Primary - Select Language »)

Application Compatibility

Printer Protocol	P-Series
Buffer Size	2048 Characters
Paper Advance SW	Move Paper Only
Power On State	Off-Line
Alarm On Fault	Enable
Shuttle Timeout	4 Seconds
Unidirectional	Disable
Select SFCC	01 SOH
80-9F Hex	Printable
Control Code 06	8.0 LPI
Control Code 08	Backspace
Overstrike	Enable
View	Lines
Display Language	English

Paper Format

Line Spacing	Set At 6 LPI
Form Length Set	At 11 Inches
Auto Line Feed	After Full Line
Define CR code	CR = CR
Define LF code	LF = CR + LF
VFU Select	EVFU
Perforation Skip	Disable
Paper Out	End Of Paper
Paperout Adjust	ZZZ Dot Rows
PMD Fault	Enable
Print Width	13.2 Inches (PR900), 13.7 Inches (PR800)
Slow Paper Slew	Disable



Host Interface

Data Protocol

Data Rate
Word Length
Stop Bit
Parity
Bit 8 Function
Data Term Ready
Request To Send
Reverse Channel

Serial RS-232

X-ON/X-OFF

19200 BAUD (Option)
8 Bits
1
Even
Ignore
On-Line And BNF
On-Line And BNF
On-Line And BNF



A.2 Configuration Parameters for PR800/PR900

PR800 and PR900 are printers with IGP board

DPU	V1.00R	02-May-95	#153937
RSP/CCB	V1.01A	27-Jan-95	#153339
RTP/BUL/CCB	V1.00C	09-Mar-95	#153718
PFC/STD	V1.03D	13-Mar-95	#153781
FONT	V1.00D	21-Jul-94	#152644

Print Statistics

Power-on Time	xxxxx.x Hours
Print Time	xxxxx.x Hours
Shuttle Strokes	xxxxxxxxxx
Print Lines	xxxxxxxxxx
Print Pages	xxxxxxxxxx
Phase Adjustment	DDD
Configuration	Y

Ribbon Life

Job Rate	Currently 150
ribbon size	Currently 60
When Worn Action	TO Stop Printer
Enable/Disable	Disable Action

Font

Font	DP AT 10 CPI
------	--------------

Character Set

Select Set	ISO 8859
Select Subset	ISO 8859-1 (Menu: « Extended Select Language »)
Select Language	ASCII (Menu : « Primary Select Language »)



Application Compatibility

Printer Protocol	P-Series
Buffer Size	2048 Characters
Paper Advance SW	Move Paper Only
Power On State	Off-Line
Alarm On Fault	Enable
Shuttle Timeout	4 Seconds
Unidirectional	Disable
Select SFCC	01 SOH
80-9F Hex	Printable
Control Code 06	8.0 LPI
Control Code 08	Backspace
Overstrike	Enable
View	Lines
Display Language	English

Paper Format

Line Spacing	Set At 6 LPI
Form Length	Set At 11 Inches
Auto Line Feed	After Full Line
Define CR Code	CR = CR
Define LF Code	LF = CR + LF
VFU Select	EVFU
Perforation Skip	Disable
Paper Out	End Of Paper
Paperout Adjust	ZZZ Dot Rows
PMD Fault	Enable
Print Width	13.7 (PR800)/13.2 (PR900) Inches
Slow Paper Slew	Disable



Host Interface	Dataproducts
Data Bit 8	Enable
PI Line	Enable
Data Polarity	Standard
Resp. Polarity	Standard
Strobe Polarity	Standard
Latch Data On	Leading Edge

PR800/ PR900 IGP Board Configuration

Intelligent Graphics Processor (IGP-100/200/400)

Program Part Number : 153200 Version 2.49P
 Font Prt Number : 352939-001 V1.00A
 Date : 21 DEC 94

Diagnostics completed successfully

Address = 00 (Serial Interface Setup Options)

	8	7	6	5	4	3	2	1
DIP Switch Setting =	OFF	ON	ON	ON	ON	OFF	OFF	OFF

7-8 = Number of Stop Bits : 1
 6 = Parity : Even
 5 = Parity Control : Enabled
 4 = Number of Data Bits : 8
 2 = RTS High when Power ON Select : Disabled
 1 = RTS Signal Polarity : Normal



Address = 01 (Serial Interface Setup Options)

	8	7	6	5	4	3	2	1
DIP Switch Setting =	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF

- 8 = Transmit Data to the Host Computer : Enabled
- 6 = DTR Signal Polarity : Normal
- 5 = RTS is a function of On/OffLine : only
- 4 = DTR is a function of On/OffLine : only
- 1-3 = Protocol Type : SERIES 1/1 CHR RESP

Address = 02 (Serial Interface Setup Options)

	8	7	6	5	4	3	2	1
DIP Switch Setting =	OFF	OFF	OFF	ON	ON	ON	ON	OFF

- 6-8 = (XOFF Level - XON Level) Select : 1536 Characters
- 5 = DTR High when Power ON Select : Enabled
- 1-4 = Baud Rate : 19.2K

Address = 03 (Serial Poll Character)

	8	7	6	5	4	3	2	1
DIP Switch Setting =	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

- 1-8 = Serial Poll Character : 00 = NUL (^@)



Address = 04 (Parallel Interface Setup Options)

	8	7	6	5	4	3	2	1
DIP Switch Setting =	OFF	ON	OFF	ON	OFF	OFF	ON	OFF

- 8 = Interface Type : Serial
- 7 = Parallel Type : Data Products
- 6 = Sense of Data Bit 8 Line : Enabled
- 5 = Sense of PI Line : Disabled
- 4 = Data Line Logic Polarity : High True
- 3 = Data Strobe Sample Edge : Leading Edge
- 2 = Response Line Polarity : High True
- 1 = Invert Data Strobe : Disabled

Address = 05 (Programming Compatibility Options)

	8	7	6	5	4	3	2	1
DIP Switch Setting =	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

- 8 = Carriage Return = Line Feed Select : Disabled
- 7 = Auto Line Feed after Full Line : Disabled
- 6 = EOT (04) /ENQ (05) Strip Select : Disabled
- 5 = Character Ignored Option Select : Disabled
- 4 = User Pre-Stored Program ROM Select : Disabled
- 3 = Active Font in the Pass-thru Mode : Printer
- 2 = 17 CPI Font with Descenders Select : Disabled
- 1 = Serial Interface Idle Response : Disabled

Address = 06 (Character Ignored Option)

	8	7	6	5	4	3	2	1
DIP Switch Setting =	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF

- 1-8 = Character to be Ignored : 06 = ACK (^F)



Address = 07 (Special Function Control Character)

	8	7	6	5	4	3	2	1
DIP Switch Setting =	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON

1-8 = SFCC Code Selection : 01 = SOH (^A)

Address = 08 (Paper Format Setup Options)

	8	7	6	5	4	3	2	1
DIP Switch Setting =	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF

- 8 = Printer PI Line : Disabled
- 7 = Binary Count PI (00-0F) Select : 1-16 lines
- 6 = Carriage Return (OD) Editing : Disabled
- 5 = Single status resp after bufr full : Enabled
- 4 = Receive data during form plotting : Disabled
- 3 = Flush bufr when printer is offline : Disabled
- 2 = Optimized Barcode Ratio Select : Disabled
- 1 = High Density OCR-A/B Select : Enabled

Address = 09 (Printer Type Options)

	8	7	6	5	4	3	2	1
DIP Switch Setting =	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF

- 6-8 = Type of Printer : P9012/P4280
- 3-5 = Print Mode on Power Up : Not Used
- 2 = Printer Protocol : P-Series
- 1 = Multi-national Font Select : ISO 8859-1



Address = 0A (Miscellaneous Special Options #1)

	8	7	6	5	4	3	2	1
DIP Switch Setting =	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF

- 8 = QUIET Mode on Power Up : Enabled
- 7 = Scaling Inputs Round Off Select : Disabled
- 6 = Condensed Config. msg in Self-Tests : Disabled
- 1-5 = Character Font Selected : ASCII

Address = 0B (Miscellaneous Special Options #2)

	8	7	6	5	4	3	2	1
DIP Switch Setting =	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

- 8 = Save Forms/Logos on Power Down : Disabled
- 7 = RESET Command Select : Soft Reset



A.3 Configuration Parameters for PRx01/PRx02 - V2.04K

V2-04K firmware version

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Date 15-Jun-1998

Program File Version 2.04K Part No. 352023

LinePrinter+ Version 2.03H

DC	V2. 03H	09-Mar-98	#351879
EC	V2.01FA	15-Jun-98	#352126
BOOT/CMX	V1.04P	09-Mar-98	#351876
SHUTTLE TYPE	XX00		
FLASH	2 MB		
DRAM	1 MB		
SECURITY PAL	154140-001 (for non IGP use)		
CONFIGURATION CODE	FC06FF		

EMULATION

LinePrinter+

Printer Protocol

P-Series

Control Code 06	8.0 LPI
Control Code 08	BackSpace
Define CR code	CR = CR
Auto LF	Disable
Overstrike	Enable
Define LF code	LF = CR + LF
Select SFCC	1
VFU Select	EVFU
Alt. Set 80-9F	Printable
Character Set	

Standard Sets



ECMA Latin 1	
Primary Subset	ASCII (USA)
Extended Subset	Latin 1 8859-1
SFCC d Command	Even dot plot
CPI/LPI Select	
Select CPI	10.0 CPI
Select LPI	6.0 LPI
Host Command	Enable
Font Attributes	
Typeface	Data Processing
Prop. Spacing	Disable
Bold Print	Disable
Italic Print	Disable
Slashed Zero	Disable
Text Position	Top of Line
Page Format	
Margins	
Left Margin	0 columns
Right Margin	0 columns
Bottom Margin	0 lines
Perforation Skip	Disable
Form Length	
Abs. Length IN	11.0 inches
Abs. Length MM	279.4 mm
Funct. of Lines	66 lines
Form width	
Abs. Width IN	13.6 inches
Abs. Width MM	345.4 mm
Function of CPI	136 characters
Print Char. Set	
Reset Cmd CFG Ld	Disable



MAINT / MISC

Hex Dump Mode	Disable
Alarm	On
Power-up State	Offline
Display Language	English
Cancel Key	Enable
Eject Function	Disable
Linefeed Func.	Disable
Power stacker(Optional)	Enable
Auto Locking	Disable
Set Lock key	

HOST INTERFACE

Serial

Interface Type	RS-422 (Option)
Data Protocol	Series1 1 Char
Baud Rate	38400 BAUD (Option)
Word Length	8
Stop Bits	1
Parity	Even
Data Term Ready	ON-Line and BNF
Request to Send	On-Line and BNF
Buffer Size in K	16
Poll Character	00 Hex
Poll Response	0 ms
Idle Response	Disable

PRINTER CONTROL

Unidirectional	Disable
PMD Fault	Enable
Open Platen @BOF	Disable
Slow Paper Slew	Disable
Power Saver Time	15 min.
Shuttle Timeout	5 seconds



DIAGNOSTICS

Printer Tests	Shift Recycle
Test Width	Full Width
Paper Out Dots	
xx Dots	
System Memory	1 Megabytes
Print Statistics	
ON:	xxxxxxxx Hrs
Print:	yyyyyyyy Hrs
Print strokes	nnnnnnn
Print lines	mmmmm
11 inch Pages	zzzzz

RIBBON MINDER

New Ribbon	
Ribbon action	Custom. Depend
Ribbon size	XX yards
Ribbon Adjust	0
Fault Action	New Ribbon



A.4 Configuration Parameters for PRx01/PRx02/PRX02A - V2.06J

V2-06J firmware version

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Date 12-April-1999

Program File Version 2.06J Part No. 353261

LinePrinter+ Version 2.05J

DC	V2.05J	12-Apr-99	#353259
EC	V2.01M	10-Dec-98	#352769
BOOT/CMX	V1.05H	11-Jan-99	#352866
SHUTTLE TYPE	XX00		
FLASH	4 MB		
DRAM	8 MB		
SECURITY PAL	154140-001 (for non IGP use)		
CONFIGURATION CODE	FC06FF		

EMULATION

LinePrinter+

Printer Protocol

P-Series

Control Code 06	8.0 LPI
Control Code 08	Backspace
Define CR code	CR = CR
Auto LF	Disable
Overstrike	Enable
Define LF code	LF = CR + LF
Select SFCC	1
VFU Select	EVFU
Alt. Set 80-9F	Printable
Character Set	

Standard Sets



ECMA Latin 1	
Primary Subset	ASCII (USA)
Extended Subset	Latin 1 8859-1
SFCC d Command	EVEN dot plot
CPI/LPI Select	
Select CPI	10.0 CPI
Select LPI	6.0 LPI
Host Command	Enable
Font Attributes	
Typeface	Data Processing
Prop. Spacing	Disable
Bold Print	Disable
Italic Print	Disable
Slashed Zero	Disable
Text Position	Top of Line
Page Format	
Form Length	
Abs. Length IN	11.0 inches
Abs. Length MM	279.4 mm
Funct. of Lines	66 lines
Form Width	
Abs. Width IN	13.6 inches
Abs. Width MM	345.4 mm
Function of CPI	136 characters
Margins	
Left Margin	0 columns
Right Margin	0 columns
Bottom Margin	0 lines
Perforation Skip	Disable
Print Char. Set	
Reset Cmd CFG Ld	Disable



Downloaded Fonts	
Char Operations	
Delete frm Flash	
Load frm Flash	
Save to Flash	
Delete from RAM	
Ld Char at PwrUp	Disable
Set Operations	
Delete frm Flash	
Load from Flash	
Save to Flash	
Delete from RAM	
Ld Set at PwrUp	Disable
Set Substitution	Inactive
MAINT / MISC	
Hex Dump Mode	Disable
Alarm	On
Power-up State	Offline
Display Language	English
Cancel Key	Enable
Eject Function	Disable
Linefeed Func.	Disable
Power stacker(Optional)	Enable
Auto Locking	Disable
Set Lock key	



HOST INTERFACE

Serial

Interface Type	RS-422 (Option)
Data Protocol	Series1 1 Char
Baud Rate	38400 BAUD (Option)
Word Length	8
Stop Bits	1
Parity	Even
Data Term Ready	ON-Line and BNF
Request to Send	On-Line and BNF
Buffer Size in K	16
Poll Character	00 Hex
Poll Response	0 ms
Idle Response	Disable

PRINTER CONTROL

Unidirectional	Disable
PMD Fault	Enable
Open Platen @BOF	Disable
Slow Paper Slew	Disable
Power Saver Time	15 min.
Shuttle Timeout	5 seconds



DIAGNOSTICS

Printer Tests	Shift Recycle
Test Width	Full Width
Paper Out Dots	
xx Dots	
System Memory	X Megabytes
Print Statistics	
ON:	xxxxxxxx Hrs
Print:	yyyyyyyy Hrs
Print strokes	nnnnnnn
Print lines	mmmmm
11 inch Pages	zzzzz

RIBBON MINDER

New Ribbon	
Ribbon action	Custom. Depend
Ribbon size	XX yards
Ribbon Adjust	0
Fault Action	New Ribbon



A.5 Configuration Parameters for PRx01/PRx02/PRX02A - V2.07C

V2-07C firmware version

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Date 25-Sep-00

Program File Version 2.07C Part No. 356788

LinePrinter+ Version 2.06B

DC	V2.06B	18-Sep-00	#356733
EC	V2.01VG	26-Sep-00	#356787
BOOT/CMX	V1.05V	27-Jul-00	#356435
SHUTTLE TYPE	XX00		
FLASH	4 MB		
DRAM	8 MB		
SECURITY PAL	154140-001 (for non IGP use)		
CONFIGURATION CODE	FC06GF		

EMULATION

LinePrinter+

Printer Protocol

P-Series

Control Code 06	8.0 LPI
Control Code 08	BackSpace
Define CR code	CR = CR
Auto LF	Disable
Overstrike	Enable
Define LF code	LF = CR + LF
Select SFCC	1
VFU Select	EVFU
Alt. Set 80-9F	Printable

Character Set

Standard Sets

ECMA Latin 1



Primary Subset	ASCII (USA)
Extended Subset	Latin 1 8859-1
SFCC d Command	EVEN dot plot
CPI/LPI Select	
Select CPI	10.0 CPI
Select LPI	6.0 LPI
P/S Mode CPI	Changed
Host Command	Enable
Font Attributes	
Typeface	Data Processing
Prop. Spacing	Disable
Bold Print	Disable
Italic Print	Disable
Slashed Zero	Disable
Text Position	Top of Line
Page Format	
Form Length	
Abs. Length IN	11.0 inches
Abs. Length MM	279.4 mm
Funct of lines	66 lines
Form width	
Abs. Width IN	13.6 inches
Abs. Width MM	345.4 mm
Function of CPI	136 characters
Margins	
Left Margin	0 columns
Right Margin	0 columns
Bottom Margin	0 lines
Perforation Skip	Disable
Print Char. Set	
Reset Cmd CFG Ld	Disable
Set Substitution	Inactive



MAINT / MISC

Hex Dump Mode	Disable
Alarm	On
Power-up State	Offline
Display Language	English
Downloaded Fonts	
Char Operations	
Delete frm Flash	
Load frm Flash	
Save to Flash	
Delete from RAM	
Ld Char at PwrUp	Disable
Set Operations	
Delete frm Flash	
Load from Flash	
Save to Flash	
Delete from RAM	
Ld Set at PwrUp	Disable
Cancel Key	Enable
Eject Function	Disable
Linefeed Func.	Disable
Power stacker(Optional)	Enable
Auto Locking	Disable
Set Lock key	



HOST INTERFACE

Serial

Interface Type	RS-422 (Option)
Data Protocol	Series1 1 Char
Baud Rate	38400 BAUD (Option)
Word Length	8
Stop Bits	1
Parity	Even
Data Term Ready	ON-Line and BNF
Request to Send	On-Line and BNF
Buffer Size in K	16
Poll Character	00 Hex
Poll Response	0 ms
Idle Response	Disable

PRINTER CONTROL

Unidirectional	Disable
PMD Fault	Enable
Open Platen @ BOF	Disable
Slow Paper Slew	Disable
Power Saver Time	15 min.
Shuttle Timeout	5 seconds
Bar Code Quality	Draft

DIAGNOSTICS

Printer Tests	Shift Recycle
Test Width	Full Width
Paper Out Dots	
xx Dots	
System Memory	X Megabytes
Print Statistics	
ON:	xxxxxxx Hrs
Print:	yyyyyyy Hrs



Print strokes	nnnnnn
Print lines	mmmmm
11 inch Pages	zzzzz
RIBBON MINDER	
New Ribbon	
Ribbon action	Custom. Depend
Ribbon size	XX yards
Ribbon Adjust	0
Fault Action	New Ribbon



Glossary

A

API

Application Programming Interface.

Applet

A Java program that can run only inside a Web page displayed by a Java-capable browser such as HotJava or Netscape.

Application (Java)

A stand-alone Java program.

ARM (Automatic Resource Management)

A GCOS7 system administration and regulation tool.

AVR (Automatic Volume Recognition)

Whenever a device is put into the READY state, the system tries to identify the volume. This operation is called Automatic Volume Recognition.

B

Backing Store (BKST)

Due to limitations in main memory size, backing store files are used to contain permanent or temporary information and to temporarily store executing programs not being processed by the system.

Browser

Designates a Web navigation program.

BSR (Basic System Release)

The BSR contains the firmware source components.

Bytecode

Set of instructions, similar to machine code, that is generated when the Java compiler processes a Java application. The bytecode, unlike machine code, can be executed on any platform and any operating system that has a Java interpreter (Java Virtual Machine).



C

CDA 7 (Cached Disk Array 7)

A disk unit for DPS 7000 redundant models.

CGI

Common Gateway Interface.

Client

A client is an application that interacts with server application(s). Sometimes called **client application**.

CNP7 (Communications Network Processor 7)

The network processor that is fully integrated into the cabinet of the DPS 7000, entry level models.

Communication services

Communication services is the generic name for the software (middleware) that handles the communication between the client and the server in a client/server environment.

Console or Operator Station Console

The workstation from which the operation of a computer system can be monitored and controlled.

Crash

GCOS7 operating system session abnormal termination.

Crash Reasons

Crash attribute that describes previous operating system session crash originator: System Exception, Call to Panic, Channel Exception, IOP Exception, System Restart, Hardware Failure.

D

Device Identifier (dvnrm)

The device identifier is made up of the 2 letters for the device type and the 2 characters for number (e.g. PR01).

Device Type (dvtyp)

Each device belongs to a device type identified by two letters (e.g., PR = printer). Each device of a device type is identified by a device number (2 digits or letters).

Device Reconfiguration

If the operator mounts a removable volume (typically a cartridge or a magnetic tape) on a device other than the device requested by the system, AVR reads the volume name and directs the job to this new device. This is called, Device Reconfiguration.

Dimension

A set of rules pertaining to memory, CPU and multiprogramming used by the Automatic Resource Manager (ARM)



DIUF

DSA Installation and Updating Facility.

Double Failure

In the Complex Management Service of the TDS High Availability product, the term DOUBLE FAILURE indicates the situation where the two COMPLEX MEMBERS have successively crashed without the CMSRs being able to resynchronize themselves.

DPCV

The standard load module that converts a BKST type system dump output file into a UFAS indexed file ready for access by the DUMP ANALYZER service.

DPS 7000/TA

This is a platform containing two types of processor: GCOS7 and OPEN.

DPS 7000/XTA

This is a new platform, developed on an Intel™ Architecture bus, this platform is a major improvement of the DPS 7000/TA series.

The processors are still shared between GCOS7 programs and Open world. .

DSA

Distributed System Architecture for communications.

Dump

The operator can either print, display, or store for later printing, the dump (GCOS7 address space image) of the previous session.

F

FDA 7 (Fiber Disk Array 7)

A disk subsystem for DPS 7000 models, allows user's disks to be secured with RAID1 mechanism.

FEP (Front End Processor)

Communications processor that manages connections to data networks.

FECM

Front End Control Management, an administration server for telecommunication processors.

FF1 (Full Form 1)

This is a logical page for printing used with the SYS.URCINIT printer control facility.

FGF

Firmware Generation Facility.

FSA

Fixed Sector Architecture, for disk subsystem.



File Salvaging

Following a crash or any other abnormal termination of the previous session, action is taken to establish the state of files open at the time. Decisions are made about whether these files can be restored, kept or lost.

Form

This refers to a paper page in printer control.

FORMHT

Form height in line numbers.

G

GAC (General Access Control)

This GCOS7 Facility enables several users in any of the Batch processing, IOF (IQS) processing and TDS processing, to access the same resources concurrently.

Galileo

An external peripheral controller which is used to connect on DPS 7000 platforms the Powersave, PowerExchange and Opensave offer.

The GCOS7 external device type is equivalent to a CT/M6 device. GCL (GCOS7 Command Language)

The current set of CGOS7 commands providing a user-friendly interface with menus and prompts for the operator.

GCOS7 (General Comprehensive Operating System 7)

The operating system of the DPS 7000 family of computers.

GCOS7 processor

Corresponds to IPU (Instruction Processor Unit) processor.

GIUF

GCOS7 Installation and Updating Facility.

GKS

Graphic Kernel System.

GPL (GCOS7 Programming Language)

A programming language for systems programmers who develop advanced applications similar to GCOS7 basic software.

GSF

GCOS7 Service Facility.

GUI

Graphical User Interface.



H

HOF (Head Of Form)

This is the logical starting point for printing.

HRD (High Reliability Disk)

Disk accessed through a sub-system ensuring high reliability.

HTML

Hyper Text Markup Language.

HTTP

Hyper Text Transport Protocol.

I

Initialization

Consists of several phases, which can be divided into two categories:

1. Loading operating systems necessary to proper system operation (GCOS7, the main operating system, is loaded after SPOS the service operating system. There is also a variety of other modules such as SPI, SIP, or MID, that we are not concerned with here).
2. Testing the correct functioning of the system.

Installation

The largest possible system than can be built on one site, i.e. the total resources than can be controlled from one Service Processor.

IOF (Interactive Operation Facility)

The GCOS7 versatile time-sharing system that can operate in batch, remote batch and transactional contexts.

IRT (Installation Resource Table)

A file describing the installation configuration. It is loaded at system initialization time and is used to build the SRST.

On DPS 7000/XTA platforms, the GCOS7 resources are managed by the V7000 software. IRT is no more used.

ISL (Initial System Load)

The last phase of system initialization. ISL loads the GCOS7 operating system into main memory.



J

JAS (Journalization Advanced Service)

The GCOS7 service that guarantees the integrity of a set of user files. In the Complex Management Service of the TDS High Availability product, a JAS SERVICE is SWITCHABLE when there are no MIXED JOBS or non-HA TDS jobs running.

Java

An object-oriented programming language developed by Sun Microsystems. Modeled on C++, the Java language is designed to be small, simple, and portable across hardware platforms and operating systems.

Java Script

Field in an HTML document used by an application to insert variables.

Java Virtual Machine

The Java interpreter, which executes Java bytecodes.

JCG (Job Class Group)

A 'mother' job class associated with one or several 'daughter' job classes, used by ARM.

Job

Work that is processed in a GCOS7 system. A job is introduced, scheduled, executed and output. It is identified by a run occurrence number (ron) and has a job-class.

Job Checkpoints

In case of error in the processing of a job, one can restart the processing, not completely from the beginning, but from the latest in a series of steps in the process, known as checkpoints.

Job Class

This is a composite object larger than a job. A job-class is modified, executed, held, given priorities, etc.

Job Input Queue

After a job has been introduced to the system and is not HELD, it is placed in a scheduling queue to be selected for execution. Its place in this schedule depends on its scheduling priority, or, by default, the priority of its class and its FIFO (First In First Out) position in that class.

Job Outputs

After job execution, the resulting job output is printed or stored on magnetic media.



L

LEVEL (I and II)

In the Complex Management Service of the TDS High Availability product, the term LEVEL refers to different levels of availability offered by the CMSC.

LM

Load Module.

LMC

Large Memory Cache.

LOS (Level of Simultaneity)

The number of simultaneous data transfers that can be performed on a set of peripheral devices.

M

MAIN Operator

An operator registered in the site catalog with the MAIN attribute.

MAM (Message Access Method) Message Queues

These are queues for communication messages, stacked in order to establish or retrace the events concerning a job run over the network. At Restart, various actions are possible regarding these queues, for example, elimination, or storage for rollback.

Millennium Application Test Facility

On DPS 7000, the ability to test an application with a private date within one GCOS7.

MSP (Mass Storage Processor)

Subsystem controller.

MSPD

ORU name for a SCSI drive and streamer controller.

Multiprogramming

Execution of two or more unrelated programs on the same computer.

N

NTFS (NT File System)

The Windows™ file system used for V7000 software.



O

OCL (Operator Command Language)

The older GCOS7 command set that is still operational, but without the menus and other user-friendly features of the newer GCL.

OLTD

Online Test and Diagnostic Facility.

OPR (Output Priority)

Used to queue outputs waiting to be processed by the writer service job.

P

Package

Java term for a group of related classes and interfaces. Packages enable modular groups of classes to be available only if they are needed and eliminate potential conflicts between class names in different groups of classes.

PMOS (Programmed Operator Support)

A program, that can be installed locally or at a remote site, which executes many of the routine actions of the main GCOS7 operator.

Power-on (or Power-up)

The action of applying power to the system. When the *Hardware Initialization* mode is in automatic - the normal situation on all DPS 7000 systems - this is followed by *initialization*, without any operator intervention required.

R

Redundant (System)

The term REDUNDANT is used in this manual for systems having major components that are in duplicate to prevent failure of the system in case of breakdown of a component.

Reference Level

In printing, this is the paper position when the paper fold coincides with a mark located on the tractors.

Reload

The action of performing again the *Initial Storage Load* after a *System Termination*.

Remote Method Invocation (RMI)

Object world's equivalent of Remote Procedure Calls (RPCs). RMI enables the creation of distributed Java-to-Java applications, in which the methods of Java objects can be invoked from other Java applications, even on different platforms.



Remote Operator

A correspondent intervening on the system by use of the network.

Restore

If the CONFIG job has been run or a new technical status installed then a RESTORE is mandatory. Equally if segments of the SYS.BKST or SYS.LIB files have been corrupted due to a physical Input/Output error, then this file must be restored from the SYS.SYSTEM file using the FORMAT option.

RON (Run Occurrence Number)

GCOS7 gives a ron identification number to each job in the system. By this number, an operator can identify a job once introduced.

RMOS (Remote Multiplexed Operator Support)

An interactive processor under IOF that enables the monitoring of applications at different sites from a single terminal without having to log-on/log-off.

RPC

Remote Procedure Call.

Restart

- Cold
- Warm
- Clean

S

SDA 7 (Small Disk Array 7)

A RAID1 disk unit which provides 20 GB to 40 GB per cabinet. It can be:

- connected to Bull DPS 7000 non-redundant systems,
- connected to Bull open systems,
- shared between Bull DPS 7000 non-redundant systems and Bull open systems.

Segment

In printing, this designates repetitive series of characters on a belt.

Server

A server is an application that interacts with clients. Sometimes called **server application**.

A server executes the server portion of a client/server application.

SM (Shareable Modules)

These are system modules that can be accessed in the processing of different jobs at the same time.

Space Line

In printing, this is the minimum space between two printed lines.



SPR (Scheduling Priority)

Used with job classes to control the order in which jobs are queued and selected for scheduling.

SRST

System Resource and Status Table. At initialization, the System Initialization Program (SIP) updates the **IRT** image, according to the actual state of the configuration, to produce the SRST for that system. The SRST is visible to the Operating System.

On DPS 7000/XTA platforms, the SRST is managed by V7000 software, SIP and IRT are not used.

SSI

Storage Server Interface. This is a CLX process located:

- on the ACSLS server for the DPS 7000/XTA platforms
- or on a local OPEN7 subsystem for all other DPS 7000 platforms.

Stop Level

VFU channel entry/hole.

Substitution Character

Character to be printed instead of a combination that is not present on the belt.

SW (Switchable)

In the Complex Management Service of the TDS High Availability product, a SERVICE is said to be SWITCHABLE if it can be switched from one system to the other.

SYC (System Control)

Is a Software service which is used to control the DPS 7000 platforms: it allows for example the system initialization, system reload,, system restart commands.System Disk

The disk containing the SYS.BKST (or BKST0) file. This disk is automatically resident, although the RSDT attribute is not displayed by the DHW command.

System Operator Panel(s) (SOP)

The panel(s) used by the operator to control and monitor CSS initialization and operation. They are illustrated and described in Section 2 of the present manual.

System Reset (or Re-initialization)

The action of completely repeating *initialization*, as if a power-off/power-on command had been entered.

System Termination

A system termination can occur in two ways:

Normal termination is requested by the operator using the TSYS command.

Abnormal termination occurs when the system crashes, following an error that cannot be overcome by the GCOS7 operating system.



T

TA (Twin Architecture)

A DPS 7000 series (DPS 7000) which is the first DPS 7000 series to promote the Twin Architecture (GCOS7 and Open world on the same server).

TCP/IP

Transmission Control Protocol/Internet Protocol.

TDF

Test and Diagnostic Facility.

TDS

Transaction Driven Subsystem, the transactional product of GCOS7.

Terminal

A device connected to the network and accessed by telecommunications software.

TPR

Transaction Processing Routine, the application program of a TDS.

U

UFAS (Unified File Access System)

The UFAS Extended access method is versatile in its operation and it supports files with different organizations including data base files. UFAS Extended is the most used access method with GCOS7.

URL

Uniform Resource Locator. The address of a resource anywhere on the Web. It is composed of a protocol name, a server address, and a resource name.

V

V7000 (Virtual DPS 7000)

Is the name of a Firmware and software product enabling GCOS7 programs to run on an Intel architecture based server.

This product is the base of the DPS 7000/XTA platforms.

VCAM

Virtual Communication Access Method in GCOS7.

VFU (Vertical Format Unit)

In printing, this is a set of channels containing predefined stop levels for automatic page printing.

VMM (Virtual Memory Manager)

The GCOS7 component that manages main memory and backing store to provide the virtual address space visibility.



Volume (file)

Disks, tape reels, and tape cartridges are referred to as volumes. A Volume contains one or more files. Each file is, for the user, a set of information.

Volume Name

Disks, cartridges, and magnetic tape volumes are identified by their Volume Name (volnm). The term volnm is used throughout this manual for convenience, but the volnm may in fact be alphabetic, alphanumeric or numeric.

VOS (V7000 Operation Supervisor)

It is a V7000 service used on DPS 7000/XTA platform to manage the server activity.

W

WEB

Also called World Wide Web or W3.

WSP (Wide SCSI Processor)

A controller for wide SCSI disk or cartridge subsystem connections.

X

XPR (Execution Priority)

Controls CPU sharing between executing steps during multiprogramming.

XTA (eXtended Twin Architecture)

The name of a DPS 7000 series which is a major evolution of the DPS 7000/TA platform. This DPS 7000/XTA platform runs GCOS7 programs on an Intel architecture based server whereas the previous DPS 7000 platforms run GCOS7 programs on a Bull proprietary CPU chipset.

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