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EOSDIS Core System Project

ECS COTS Deployment Plan Volume 6

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Raytheon Company
Upper Marlboro, Maryland

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RESPONSIBLE ENGINEER

Maryellen Corbett /s/ 2/5/02

Maryellen Corbett Date
EOSDIS Core System Project

RESPONSIBLE MANAGER

Carolyn Whitaker /s/ 2/5/02

Carolyn Whitaker, Systems Engineering COTS Manager Date
EOSDIS Core System Project

SUBMITTED BY

Valecia Maclin /s/ 2/5/02

Valecia Maclin, Systems Engineering Manager Date
EOSDIS Core System Project

Raytheon Company
Upper Marlboro, Maryland

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Preface

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Any questions should be addressed to:

Data Management Office
The ECS Project Office
Raytheon Systems Company
1616 McCormick Drive
Upper Marlboro, Maryland 20774-5301

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Abstract

This is the sixth volume in a series of documents that provide information and details associated with the upgrading of COTS products within the Earth Observing System Data and Information System (EOSDIS) Core System (ECS). This document provides information regarding products that are being upgraded or added, rationale for the upgrade, schedule for upgrade, and the process used to report weekly status. The document also provides information about the reviews and risk mitigation activities performed throughout the upgrade cycle.

Keywords: product, schedule, status, hardware, software, COTS, Solaris, IRIX, S8

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Change Information Page

List of Effective Pages			
Page Number		Issue	
Title			Original
iii through xxviii			Original
1-1 and 1-2			Original
2-1 and 2-2			Original
3-1 through 3-10			Original
4-1 through 4-28			Original
5-1 through 5-46			Original
6-1 through 6-6			Original
7-1 through 7-24			Original
8-1 through 8-12			Original
A-1 through A-14			Original
B-1 through B-16			Original
C-1 through C-18			Original
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Contents

Preface

Abstract

Change Information Page

1. Introduction

1.1	Identification	1-1
1.2	Scope.....	1-1
1.3	Purpose.....	1-1
1.4	Status and Schedule	1-1
1.5	Organization.....	1-1

2. Related Documents

2.1	Parent Documents	2-1
2.2	Applicable Documents.....	2-1
2.3	Information Documents	2-2

3. COTS Upgrade Overview

3.1	COTS Upgrade Process Overview.....	3-1
3.2	Mitigating Risks.....	3-1
3.2.1	Identification of Defect/NCRs	3-1
3.2.2	Vendor Support.....	3-2
3.2.3	Cross Product Software Compatibility	3-4
3.2.4	Features/Performance Upgrades	3-6

3.3	Conservation of ECS Resources	3-7
3.4	R6σ (Sigma) COTS Software Upgrade Process Improvement	3-7
3.5	COTS Upgrade Summary	3-8

4. COTS Software Upgrades Prior to Solaris 8 Transition

4.1	Open Client 11.1.1 (EBF9798)	4-1
4.1.1	Description of COTS	4-1
4.1.2	Rationale for Upgrade.....	4-1
4.1.3	Operational Impact.....	4-2
4.1.4	Custom Code Impact.....	4-2
4.1.5	Security Impact	4-2
4.1.6	Licensing Impact.....	4-2
4.1.7	External Drivers	4-2
4.1.8	Other Impacts/Comments	4-2
4.1.9	COTS Installation Sequence/Dependencies	4-2
4.2	Patch Bundle for Solaris 2.5.1 (6A_05).....	4-2
4.2.1	Description of COTS	4-2
4.2.2	Rationale for Upgrade.....	4-3
4.2.3	Operational Impact.....	4-3
4.2.4	Custom Code Impact.....	4-3
4.2.5	Security Impact	4-4
4.2.6	Licensing Impact.....	4-4
4.2.7	External Drivers	4-4
4.2.8	Other Impacts/Comments	4-4
4.2.9	COTS Installation Sequence/Dependencies	4-4
4.3	Network Time Protocol (NTP)	4-4
4.3.1	Description of COTS	4-4
4.3.2	Rationale for Upgrade.....	4-4
4.3.3	Operational Impacts	4-5
4.3.4	Custom Code Impact.....	4-5
4.3.5	Security Impact	4-5
4.3.6	Licensing Impact.....	4-5
4.3.7	External Drivers	4-5

4.3.8	Other Impacts/Comments	4-5
4.3.9	COTS Installation Sequence/Dependencies	4-6
4.4	AMASS 5.1.1	4-6
4.4.1	Description of COTS	4-6
4.4.2	Rationale for Upgrade.....	4-6
4.4.3	Operational Impact.....	4-7
4.4.4	Custom Code Impact.....	4-7
4.4.5	Security Impact	4-7
4.4.6	Licensing Impact.....	4-7
4.4.7	External Drivers	4-7
4.4.8	Other Impacts/Comments	4-7
4.4.9	COTS Installation Sequence/Dependencies	4-8
4.5	ClearCase 4.1	4-8
4.5.1	Description of COTS	4-8
4.5.2	Rationale for Upgrade.....	4-8
4.5.3	Operational Impacts	4-9
4.5.4	Custom Code Impact.....	4-9
4.5.5	Security Impact	4-9
4.5.6	Licensing Impact.....	4-9
4.5.7	External Drivers	4-9
4.5.8	Other Impacts/Comments	4-9
4.5.9	OTS Installation Sequence/Dependencies	4-9
4.6	Tivoli Distributed Monitor/Software Distribution 3.6.2.....	4-9
4.6.1	Description of COTS	4-9
4.6.2	Rationale for Upgrade	4-9
4.6.3	Operational Impact	4-10
4.6.4	Custom Code Impact	4-10
4.6.5	Security Impact	4-11
4.6.6	Licensing Impact	4-11
4.6.7	External Drivers	4-11
4.6.8	Other Impacts/Comments	4-11
4.6.9	COTS Installation Sequence/Dependencies	4-11
4.7	WhatsUp Gold 7.0	4-11
4.7.1	Description of COTS	4-11

4.7.2	Rationale for Upgrade.....	4-11
4.7.3	Operational Impact.....	4-12
4.7.4	Custom Code Impact.....	4-12
4.7.5	Security Impact	4-12
4.7.6	Licensing Impact.....	4-12
4.7.7	External Drivers	4-12
4.7.8	Other Impacts/Comments	4-13
4.7.9	COTS Installation Sequence/Dependencies	4-13
4.8	SGI BDSpro 2.3	4-13
4.8.1	Description of COTS	4-13
4.8.2	Rationale for Upgrade.....	4-13
4.8.3	Operational Impact.....	4-14
4.8.4	Custom Code Impact.....	4-14
4.8.5	Security Impact	4-14
4.8.6	Licensing Impact.....	4-14
4.8.7	External Drivers	4-14
4.8.8	Other Impacts/Comments	4-14
4.8.9	COTS Installation Sequence/Dependencies	4-14
4.9	Spatial Query Server (SQS) 3.4.2.....	4-14
4.9.1	Description of COTS	4-14
4.9.2	Rationale for Upgrade.....	4-14
4.9.3	Operational Impacts	4-15
4.9.4	Custom Code Impact.....	4-15
4.9.5	Security Impact	4-15
4.9.6	Licensing Impact.....	4-16
4.9.7	External Drivers	4-16
4.9.8	Other Impacts/Comments	4-16
4.9.9	COTS Installation Sequence/Dependencies	4-16
4.10	StorEdge Volume Manager 3.0.4.....	4-16
4.10.1	Description of COTS	4-16
4.10.2	Rationale for Upgrade.....	4-16
4.10.3	Operational Impacts	4-17
4.10.4	Custom Code Impact.....	4-17
4.10.5	Security Impact	4-17

4.10.6	Licensing Impact.....	4-17
4.10.7	External Drivers	4-17
4.10.8	Other Impacts/Comments	4-17
4.10.9	COTS Installation Sequence/Dependencies	4-17
4.11	Product Distribution System (PDS) COTS Turnover.....	4-18
4.11.1	Description of COTS	4-18
4.11.2	Rationale for Upgrade.....	4-18
4.11.3	Operational Impacts	4-19
4.11.4	Custom Code Impacts	4-19
4.11.5	Security Impact	4-19
4.11.6	Licensing Impact.....	4-19
4.11.7	External Drivers	4-19
4.11.8	Other Impacts/Comments	4-19
4.11.9	COTS Installation Sequence/Dependencies	4-20
4.12	Dashboard COTS Software Status.....	4-20
4.12.1	Dashboard as DUE.....	4-20
4.13	Data Pool Web Server and Java COTS Products.....	4-21
4.13.1	Description of COTS	4-21
4.13.2	Rationale for Upgrade.....	4-21
4.13.3	Operational Impact.....	4-22
4.13.4	Custom Code Impact.....	4-22
4.13.5	Security Impact	4-22
4.13.6	Licensing Impact.....	4-22
4.13.7	External Drivers	4-22
4.13.8	Other Impacts/Comments	4-22
4.13.9	COTS Installation Sequence/Dependencies	4-22
4.14	SGI TP9400 RAID Software Upgrade	4-23
4.14.1	Description of COTS	4-23
4.14.2	Rationale for Upgrade.....	4-23
4.14.3	Operational Impact.....	4-24
4.14.4	Custom Code Impact.....	4-24
4.14.5	Security Impact	4-24
4.14.6	Licensing Impact.....	4-24
4.14.7	External Drivers	4-24

4.14.8	Other Impacts/Comments	4-24
4.14.9	COTS Installation Sequence/Dependencies	4-24
4.15	IRIX 6.5.14 Patch Upgrade.....	4-25
4.15.1	Description of COTS	4-25
4.15.2	Rationale for Upgrade.....	4-25
4.15.3	Operational Impact.....	4-27
4.15.4	Custom Code Impact.....	4-27
4.15.5	Security Impact	4-27
4.15.6	Licensing Impact.....	4-27
4.15.7	External Drivers	4-27
4.15.8	Other Impacts/Comments	4-28
4.15.9	COTS Installation Sequence/Dependencies	4-28

5. Solaris 8-Related Upgrades

5.1	Solaris 8 Operating System Upgrade.....	5-4
5.1.1	Description of COTS	5-4
5.1.2	Rationale for Upgrade.....	5-4
5.1.3	Operational Impact.....	5-6
5.1.4	Custom Code Impact.....	5-6
5.1.5	Security Impact	5-6
5.1.6	Licensing Impact.....	5-7
5.1.7	External Drivers	5-7
5.1.8	Other Impacts/Comments	5-7
5.1.9	COTS Installation Sequence/Dependencies	5-7
5.2	FIND_DDOS 4.2	5-7
5.2.1	Description of COTS	5-7
5.2.2	Rationale for Upgrade.....	5-7
5.2.3	Operational Impact.....	5-8
5.2.4	Custom Code Impact.....	5-8
5.2.5	Security Impact	5-8
5.2.6	Licensing Impact.....	5-8
5.2.7	External Drivers	5-8
5.2.8	Other Impacts/Comments	5-8
5.2.9	COTS Installation Sequence/Dependencies	5-8

5.3	FLEXlm 8.0d	5-8
5.3.1	Description of COTS	5-8
5.3.2	Rationale for Upgrade.....	5-9
5.3.3	Operational Impact.....	5-9
5.3.4	Custom Code Impact.....	5-10
5.3.5	Security Impact	5-10
5.3.6	Licensing Impact.....	5-10
5.3.7	External Drivers	5-10
5.3.8	Other Impacts/Comments	5-10
5.3.9	COTS Installation Sequence/Dependencies	5-10
5.4	Forte Developer 6.1	5-11
5.4.1	Description of COTS	5-11
5.4.2	Rationale for Upgrade.....	5-12
5.4.3	Operational Impact.....	5-12
5.4.4	Custom Code Impact.....	5-12
5.4.5	Security Impact	5-12
5.4.6	Licensing Impact.....	5-13
5.4.7	External Drivers	5-13
5.4.8	Other Impacts/Comments	5-13
5.4.9	COTS Installation Sequence/Dependencies	5-13
5.5	SGI MIPSpro Compilers/ProDev Workshop.....	5-13
5.5.1	Description of COTS	5-13
5.5.2	Rationale for Upgrade.....	5-13
5.5.3	Operational Impact.....	5-14
5.5.4	Custom Code Impact.....	5-14
5.5.5	Security Impact	5-14
5.5.6	Licensing Impact.....	5-14
5.5.7	External Drivers	5-15
5.5.8	Other Impacts/Comments	5-15
5.5.9	COTS Installation Sequence/Dependencies	5-15
5.6	JRE for Solaris (1.3.1_01)/SGI (1.3.1)	5-15
5.6.1	Description of COTS	5-15
5.6.2	Rationale for Upgrade.....	5-15
5.6.3	Operational Impact.....	5-17

5.6.4	Custom Code Impact.....	5-17
5.6.5	Licensing Impact.....	5-17
5.6.6	Security Impact	5-17
5.6.7	External Drivers	5-17
5.6.8	Other Impacts/Comments	5-17
5.6.9	COTS Installation Sequence/Dependencies	5-17
5.7	Secure Shell/TCPWrappers	5-17
5.7.1	Description of COTS	5-17
5.7.2	Rationale for Upgrade.....	5-18
5.7.3	Operational Impact.....	5-18
5.7.4	Custom Code Impact.....	5-18
5.7.5	Security Impact	5-18
5.7.6	Licensing Impact.....	5-18
5.7.7	External Drivers	5-18
5.7.8	Other Impacts/Comments	5-19
5.7.9	COTS Installation Sequence/Dependencies	5-19
5.8	JetDirect E.10.18.....	5-19
5.8.1	Description of COTS	5-19
5.8.2	Rationale for Upgrade.....	5-19
5.8.3	Operational Impact.....	5-20
5.8.4	Custom Code Impact.....	5-20
5.8.5	Security Impact	5-20
5.8.6	Licensing Impact.....	5-20
5.8.7	External Drivers	5-20
5.8.8	Other Impacts/Comments	5-20
5.8.9	COTS Installation Sequence/Dependencies	5-20
5.9	Netscape Communicator 4.78.....	5-20
5.9.1	Description of COTS	5-20
5.9.2	Rationale for Upgrade.....	5-20
5.9.3	Operational Impact.....	5-21
5.9.4	Custom Code Impact.....	5-21
5.9.5	Security Impact	5-21
5.9.6	Licensing Impact.....	5-21
5.9.7	External Drivers	5-21

5.9.8	Other Impacts/Comments	5-21
5.9.9	COTS Installation Sequence/Dependencies	5-21
5.10	iPlanet Web Server, Enterprise Edition 6.0	5-22
5.10.1	Description of COTS	5-22
5.10.2	Rationale for Upgrade.....	5-22
5.10.3	Operational Impact.....	5-23
5.10.4	Custom Code Impact.....	5-23
5.10.5	Security Impact	5-23
5.10.6	Licensing Impact.....	5-23
5.10.7	External Drivers	5-23
5.10.8	Other Impacts/Comments	5-24
5.10.9	COTS Installation Sequence/Dependencies	5-24
5.11	PERL 5.6.1	5-24
5.11.1	Description of COTS	5-24
5.11.2	Rationale for Upgrade.....	5-24
5.11.3	Operational Impact.....	5-25
5.11.4	Custom Code Impact.....	5-25
5.11.5	Security Impact	5-25
5.11.6	Licensing Impact.....	5-25
5.11.7	External Drivers	5-25
5.11.8	Other Impacts/Comments	5-25
5.11.9	COTS Installation Sequence/Dependencies	5-25
5.12	Remedy ARS 4.5.2	5-25
5.12.1	Description of COTS	5-25
5.12.2	Rationale for Upgrade.....	5-26
5.12.3	Operational Impact.....	5-27
5.12.4	Custom Code Impact.....	5-27
5.12.5	Security Impact	5-27
5.12.6	Licensing Impact.....	5-27
5.12.7	External Drivers	5-27
5.12.8	Other Impacts/Comments	5-27
5.12.9	COTS Installation Sequence/Dependencies	5-27
5.13	Sendmail Commercial 1.2.2.....	5-28
5.13.1	Description of COTS	5-28

5.13.2	Rationale for Upgrade.....	5-28
5.13.3	Operational Impact.....	5-28
5.13.4	Custom Code Impact.....	5-29
5.13.5	Security Impact	5-29
5.13.6	Licensing Impact.....	5-29
5.13.7	External Drivers	5-29
5.13.8	Other Impacts/Comments	5-29
5.13.9	COTS Installation Sequence/Dependencies	5-29
5.14	TCL/tk 8.3.3	5-29
5.14.1	Description of COTS	5-29
5.14.2	Rationale for Upgrade.....	5-29
5.14.3	Operational Impact.....	5-30
5.14.4	Custom Code Impact.....	5-30
5.14.5	Security Impact	5-30
5.14.6	Licensing Impact.....	5-30
5.14.7	External Drivers	5-31
5.14.8	Other Impacts/Comments	5-31
5.14.9	COTS Installation Sequence/Dependencies	5-31
5.15	Crack 5.0	5-31
5.15.1	Description of COTS	5-31
5.15.2	Rationale for Upgrade.....	5-31
5.15.3	Operational Impact.....	5-32
5.15.4	Custom Code Impact.....	5-32
5.15.5	Security Impact	5-32
5.15.6	Licensing Impact.....	5-32
5.15.7	External Drivers	5-32
5.15.8	Other Impacts/Comments	5-32
5.15.9	COTS Installation Sequence/Dependencies	5-32
5.16	Tripwire 1.3.1	5-32
5.16.1	Description of COTS	5-32
5.16.2	Rationale for Upgrade.....	5-32
5.16.3	Operational Impact.....	5-33
5.16.4	Custom Code Impact.....	5-33
5.16.5	Security Impact	5-33

5.16.6	Licensing Impact.....	5-33
5.16.7	External Drivers	5-33
5.16.8	Other Impacts/Comments	5-33
5.16.9	COTS Installation Sequence/Dependencies	5-34
5.17	Sybase Open Client 12.0 for Solaris	5-34
5.17.1	Description of COTS	5-34
5.17.2	Rationale for Upgrade.....	5-34
5.17.3	Operational Impact.....	5-35
5.17.4	Custom Code Impact.....	5-35
5.17.5	Security Impact	5-35
5.17.6	Licensing Impact.....	5-35
5.17.7	External Drivers	5-35
5.17.8	Other Impacts/Comments	5-35
5.17.9	COTS Installation Sequence/Dependencies	5-35
5.18	Acrobat Reader 4.05	5-35
5.18.1	Description of COTS	5-35
5.18.2	Rationale for Upgrade.....	5-35
5.18.3	Operational Impacts	5-36
5.18.4	Custom Code Impact.....	5-36
5.18.5	Security Impact	5-36
5.18.6	Licensing Impact.....	5-36
5.18.7	External Drivers	5-36
5.18.8	Other Impacts/Comments	5-36
5.18.9	COTS Installation Sequence/Dependencies	5-36
5.19	IDL 5.5	5-37
5.19.1	Description of COTS	5-37
5.19.2	Rationale for Upgrade.....	5-37
5.19.3	Operational Impact.....	5-38
5.19.4	Custom Code Impact.....	5-38
5.19.5	Security Impact	5-38
5.19.6	Licensing Impact.....	5-38
5.19.7	External Drivers	5-38
5.19.8	Other Impacts/Comments	5-38
5.19.9	COTS Installation Sequence/Dependencies	5-38

5.20	Ghostview 1.5 binary for Solaris 8	5-38
	5.20.1 Description of COTS	5-38
	5.20.2 Rationale for Upgrade	5-38
	5.20.3 Operational Impact	5-39
	5.20.4 Custom Code Impact.....	5-39
	5.20.5 Security Impact	5-39
	5.20.6 Licensing Impact.....	5-39
	5.20.7 External Drivers	5-39
	5.20.8 Other Impacts/Comments	5-39
	5.20.9 COTS Installation Sequence/Dependencies	5-39
5.21	Dashboard COTS for Solaris 8	5-40
	5.21.1 Description of COTS	5-40
	5.21.2 Rationale for Upgrade	5-40
	5.21.3 Operational Impacts	5-42
	5.21.4 Custom Code Impacts	5-42
	5.21.5 Security Impact	5-42
	5.21.6 Licensing Impact	5-42
	5.21.7 External Drivers	5-42
	5.21.8 Other Impacts/Comments	5-42
	5.21.9 COTS Installation Sequence/Dependencies	5-42
5.22	Data Pool COTS for Solaris 8	5-43
	5.22.1 Description of COTS	5-43
	5.22.2 Rationale for Upgrade	5-43
	5.22.3 Operational Impact	5-44
	5.22.4 Custom Code Impact	5-44
	5.22.5 Security Impact	5-44
	5.22.6 Licensing Impact	5-44
	5.22.7 External Drivers	5-44
	5.22.8 Other Impacts/Comments	5-44
	5.22.9 COTS Installation Sequence/Dependencies	5-44
5.23	Forcheck 12.84.....	5-45
	5.23.1 Description of COTS	5-45
	5.23.2 Rationale for Upgrade.....	5-45
	5.23.3 Operational Impacts	5-45

5.23.4 Custom Code Impact.....	5-45
5.23.5 Security Impact	5-45
5.23.6 Licensing Impact.....	5-45
5.23.7 External Drivers	5-46
5.23.8 Other Impacts/Comments	5-46
5.23.9 COTS Installation Sequence/Dependencies	5-46

6. COTS Software Removals/Replacements

6.1 COTS Software Removals/Replacements/Reconsiderations.....	6-1
6.1.1 DDTS To be Retained.....	6-1
6.1.2 Loadrunner Removal	6-1
6.1.3 Xrunner Removal.....	6-1
6.1.4 SATAN Removal.....	6-1
6.1.5 DBVision Removal.....	6-1
6.1.6 DCE Removal	6-2
6.1.7 IQ Removal.....	6-3
6.1.8 Anlpassword Replacement.....	6-3
6.1.9 Exabyte Driver Replacement Under Review	6-4
6.1.10 Other Product Changes to be Noted.....	6-4

7. Post-Solaris 8 Upgrades

7.1 StorEdge Volume Manager 3.2.....	7-2
7.1.1 Description of COTS	7-2
7.1.2 Rationale for Upgrade.....	7-3
7.1.3 Operational Impacts	7-3
7.1.4 Custom Code Impact.....	7-3
7.1.5 Security Impact	7-4
7.1.6 Licensing Impact.....	7-4
7.1.7 External Drivers	7-4
7.1.8 Other Impacts/Comments	7-4
7.1.9 COTS Installation Sequence/Dependencies	7-4
7.2 Tivoli Server/Client 3.7.x/4.1	7-4
7.2.1 Description of COTS	7-4

7.2.2	Rationale for Upgrade.....	7-4
7.2.3	Operational Impact.....	7-5
7.2.4	Custom Code Impact.....	7-5
7.2.5	Security Impact	7-5
7.2.6	Licensing Impact.....	7-5
7.2.7	External Drivers	7-5
7.2.8	Other Impacts/Comments	7-5
7.2.9	COTS Installation Sequence/Dependencies	7-5
7.3	Sybase ASE 12.5/12.0 (Autosys Server)	7-5
7.3.1	Description of COTS	7-5
7.3.2	Rationale for Upgrade.....	7-6
7.3.3	Operational Impact.....	7-9
7.3.4	Custom Code Impact.....	7-9
7.3.5	Security Impact	7-9
7.3.6	Licensing Impact.....	7-9
7.3.7	External Drivers	7-9
7.3.8	Other Impacts/Comments	7-9
7.3.9	COTS Installation Sequence/Dependencies	7-9
7.4	Sybase 12.0 Patches for Autosys 3.5	7-10
7.4.1	Description of COTS	7-10
7.4.2	Rationale for Upgrade.....	7-10
7.4.3	Operational Impact.....	7-11
7.4.4	Custom Code Impact.....	7-11
7.4.5	Security Impact	7-11
7.4.6	Licensing Impact.....	7-11
7.4.7	External Drivers	7-11
7.4.8	Other Impacts/Comments	7-11
7.4.9	COTS Installation Sequence/Dependencies	7-11
7.5	Sybase Replication Server/Manager 12.1	7-11
7.5.1	Description of COTS	7-11
7.5.2	Rationale for Upgrade.....	7-12
7.5.3	Operational Impact.....	7-13
7.5.4	Custom Code Impact.....	7-13
7.5.5	Security Impact	7-13

7.5.6	Licensing Impact.....	7-13
7.5.7	External Drivers	7-13
7.5.8	Other Impacts/Comments	7-13
7.5.9	COTS Installation Sequence/Dependencies	7-13
7.6	jConnect 5.5	7-13
7.6.1	Description of COTS	7-13
7.6.2	Rationale for Upgrade.....	7-14
7.6.3	Operational Impact.....	7-14
7.6.4	Custom Code Impact.....	7-14
7.6.5	Security Impact	7-14
7.6.6	Licensing Impact.....	7-15
7.6.7	External Drivers	7-15
7.6.8	Other Impacts/Comments	7-15
7.6.9	COTS Installation Sequence/Dependencies	7-15
7.7	Sybase Central 4.0	7-15
7.7.1	Description of COTS	7-15
7.7.2	Rationale for Upgrade.....	7-15
7.7.8	Operational Impact.....	7-16
7.7.9	Custom Code Impact.....	7-16
7.7.10	Security Impact	7-16
7.7.11	Licensing Impact.....	7-16
7.7.12	External Drivers	7-16
7.7.13	Other Impacts/Comments	7-17
7.7.14	COTS Installation Sequence/Dependencies	7-17
7.8	DDTS 4.7	7-17
7.8.1	Description of COTS	7-17
7.8.2	Rationale for Upgrade.....	7-17
7.8.3	Operational Impact.....	7-18
7.8.4	Custom Code Impact.....	7-18
7.8.5	Security Impact	7-18
7.8.6	Licensing Impact.....	7-18
7.8.7	External Drivers	7-18
7.8.8	Other Impacts/Comments	7-18
7.8.9	COTS Installation Sequence/Dependencies	7-18

7.9	XRP-II Migration to Remedy	7-18
7.10	End of Contract Maintenance Upgrades	7-19
	7.10.1 Description of COTS	7-19
	7.10.2 Rationale for Upgrade.....	7-19
	7.10.3 Operational Impact.....	7-20
	7.10.4 Custom Code Impact.....	7-20
	7.10.5 Security Impact	7-20
	7.10.6 Licensing Impact.....	7-20
	7.10.7 External Drivers	7-20
	7.10.8 Other Impacts/Comments	7-20
	7.10.9 COTS Installation Sequence/Dependencies	7-20
7.11	Patch/EBF Upgrades Based on Historical Patterns	7-20
	7.11.1 Description of COTS	7-20
	7.11.2 Rationale for Upgrade.....	7-21
	7.11.6 Operational Impact.....	7-21
	7.11.7 Custom Code Impact.....	7-21
	7.11.8 Security Impact	7-21
	7.11.9 Licensing Impact.....	7-21
	7.11.10 External Drivers	7-21
	7.11.11 Other Impacts/Comments	7-22
	7.11.12 COTS Installation Sequence/Dependencies	7-22
7.12	Brio Report 6.2 (SQR)	7-22
	7.12.1 Description of COTS	7-22
	7.12.2 Rationale for Upgrade.....	7-22
	7.12.3 Operational Impact.....	7-23
	7.12.4 Custom Code Impact.....	7-23
	7.12.5 Security Impact	7-23
	7.12.6 Licensing Impact.....	7-23
	7.12.7 External Drivers	7-23
	7.12.8 Other Impacts/Comments	7-23
	7.12.9 COTS Installation Sequence/Dependencies	7-23

8. COTS Hardware Upgrades

8.1	Archive Additions.....	8-1
8.1.1	Description of COTS	8-1
8.1.2	Rationale for Upgrade.....	8-1
8.1.3	Software Impact (COTS/Custom).....	8-2
8.1.4	Network Impacts.....	8-2
8.1.5	DAAC Facility Impacts	8-2
8.1.6	Transition Impacts	8-2
8.1.7	External Drivers	8-2
8.1.8	Other Impacts/Comments	8-2
8.1.9	COTS Installation Sequence/Dependencies	8-2
8.1.10	Replacement Matrix.....	8-2
8.2	Firewall Implementation.....	8-3
8.2.1	Description of COTS	8-3
8.2.2	Rationale for Upgrade.....	8-3
8.2.3	Software Impact (COTS/Custom).....	8-3
8.2.4	Network Impacts.....	8-4
8.2.5	DAAC Facility Impacts	8-4
8.2.6	Transition Impacts	8-4
8.2.7	External Drivers	8-4
8.2.8	Other Impacts/Comments	8-4
8.2.9	COTS Installation Sequence/Dependencies	8-4
8.2.10	Replacement Matrix.....	8-4
8.3	AIRS Processing and Archive	8-4
8.3.1	Description of COTS	8-4
8.3.2	Software Impact (COTS/Custom).....	8-5
8.3.3	Network Impacts.....	8-5
8.3.4	DAAC Facility Impacts	8-5
8.3.5	Transition Impacts	8-5
8.3.6	External Drivers	8-5
8.3.7	Other Impacts/Comments	8-5
8.3.8	COTS Installation Sequence/Dependencies	8-5

	8.3.9	Replacement Matrix	8-5
8.4		Solaris 8 Hardware Upgrades	8-6
	8.4.1	Description of COTS	8-6
	8.4.2	Rationale for Upgrade.....	8-6
	8.4.3	Software Impact (COTS/Custom).....	8-6
	8.4.4	Network Impacts	8-7
	8.4.5	DAAC Facility Impacts	8-7
	8.4.6	Transition Impacts	8-7
	8.4.7	External Drivers	8-7
	8.4.8	Other Impacts/Comments	8-7
	8.4.9	COTS Installation Sequence/Dependencies	8-7
	8.4.10	Replacement Matrix.....	8-7
8.5		Dashboard/Data Pool MSS20 Hardware Upgrades	8-7
	8.5.1	Description of COTS	8-7
	8.5.2	Network Impacts.....	8-8
	8.5.3	DAAC Facility Impacts	8-8
	8.5.4	Transition Impacts	8-8
	8.5.5	External Drivers	8-8
	8.5.6	Other Impacts/Comments	8-8
	8.5.7	COTS Installation Sequence/Dependencies	8-8
	8.5.8	Replacement Matrix.....	8-8
8.6		Science Working Group on Data (SWGD).....	8-9
	8.6.1	Description of COTS	8-9
	8.6.1	Rationale for Upgrade.....	8-9
	8.6.2	Hardware/Software Product Compatibility.....	8-10
	8.6.3	DAAC Facility Impacts	8-10
	8.6.4	Transition Impacts	8-10
	8.6.5	External Drivers	8-10
	8.6.6	Other Impacts/Comments	8-10
	8.6.7	COTS Installation Sequence/Dependencies	8-11

List of Tables

Table 1-1. COTS Software Product Upgrade Categories/Sections	1-2
Table 3-1. COTS Hardware/Software Upgrades Summary.....	3-8
Table 4-1. AMASS NCRs.....	4-6
Table 4-2. SQS NCRs	4-15
Table 4-3. New COTS Software at PDS Turnover.....	4-18
Table 4-4. Dashboard COTS Software at Phase 2.....	4-20
Table 4-5. Data Pool Web and Java COTS Products for Solaris 2.5.1	4-21
Table 4-6. TPSSM7 RAID Software Upgrade Targets	4-24
Table 4-7. IRIX 6.5.14 Upgrades Completed	4-26
Table 5-1. “Pre-Solaris 8” Upgrades Compatible with Solaris 8 Upgrade.....	5-1
Table 5-2. COTS Products Bundled with the OS	5-2
Table 5-3. Summary of Solaris 8 Dependent COTS Upgrades	5-3
Table 5-4. Development COTS Products	5-6
Table 5-5. FLEXIm Redundant Servers.....	5-10
Table 5-7. Dashboard COTS Software for Solaris 8	5-41
Table 5-8. Data Pool Web and Java COTS Products for Solaris 2.5.1 & 8.....	5-43
Table 6-1. COTS Products Targeted for Replacement by Another Product.....	6-4
Table 7-1. Post-Solaris 8 COTS Upgrades	7-2
Table 7-2. Sybase ASE 12.0 New Features	7-6
Table 7-3. Sybase ASE 12.5 Features.....	7-7
Table 7-4. COTS with Sybase ASE 12.0/12.5 Dependencies	7-8
Table 7-5. Sybase ASE 12.0/12.5 Installation Sequence Dependencies	7-10
Table 7-6. End of Contract Maintenance Upgrades.....	7-19

Table 8-1. Archive Additions Replacement Matrix.....	8-3
Table 8-2. Firewall Replacement Matrix	8-4
Table 8-3. AIRS Processing and Archive Replacement Matrix	8-5
Table 8-4. Dashboard/Datapool mss20 Hardware Upgrade	8-8

Appendix A. CUT (COTS Upgrade Team) Status Table

Appendix B. COTS Compatibility Matrix

Appendix C. Solaris 8 Hardware Replacement Matrices

1. Introduction

1.1 Identification

This document is the ECS COTS Deployment Plan for COTS products being upgraded for the period defined for Volume 6 of this document for the ECS project as defined by Data Item Descriptions (DID) 335/DV1.

1.2 Scope

The “ECS COTS Deployment Plan, Volume 6” documents the ECS approach and currently identified plans for upgrading the various COTS packages described in section 4 and section 5 of this document. Volume 6 includes upgrades that occur during the period January 2002 through June 30, 2002. This document will be updated with subsequent volumes that will provide coverage on COTS upgrades in incremental volumes specifying upgrades over a six to nine month time period. The next volume will be Volume 7 and its coverage will begin in July 2002.

1.3 Purpose

The purpose of this plan is to provide the approach and available details related to the upgrading of the COTS products identified for Volume 6. This plan describes the process for identifying, developing, integrating, testing, and shipping all Volume 6 products; including but not limited to, reviewing, monitoring, and providing a status of those products.

1.4 Status and Schedule

Volume 6 of this document will be formally delivered in January 2002. Status on the COTS software upgrades identified in this document will be reported on a weekly basis through the COTS Upgrade Team (CUT) Matrix (Refer to Appendix A for recent CUT Matrix) and Hardware migration weekly updates/discussions with appropriate DAAC personnel.

It is essential to understand that as the identification of requirements and risks progresses, some elements of this document may change, e.g., additional products may be identified for upgrade during the period specified herein for Volume 6.

1.5 Organization

Section 1 provides information regarding the identification, scope, purpose, objectives and organization of this document.

Section 2 provides a listing of the related documents, which may be used to supplement and provide additional cross-reference information other than that which is contained in this document.

Section 3 provides an overview and introduction of the requirements driving COTS upgrades, such as custom code integration, vendor support policies or COTS product interdependencies. A brief discussion of the initiatives in the Raytheon 6Sigma (R6σ) COTS Software Upgrade Improvement Process is included for your review. This section provides a summary table of all identified COTS upgrades for the Volume 6 period. The identified COTS products are discussed in more detail in sections 4 and 5.

Sections 4 through 7 discuss COTS software upgrades as groups or categories of products. This breaks down the substantial number of COTS product upgrades that will occur in the period covered by Volume 5 into relevant categories or groups. Table 1-1 describes each section.

Table 1-1. COTS Software Product Upgrade Categories/Sections

Section	COTS Product Upgrade Categories
Section 4	This section focuses on upgrades that will take place prior to Solaris 8. While some of these upgrades may be indirectly related to Solaris 8, the upgrade will occur while the DAAC is still at the current operating systems, i.e., Pre-Solaris 8 Transition.
Section 5	This section will address the COTS upgrades that will occur as part of the Solaris 8 Transition.
Section 6	This section provides a summary of COTS product removals and replacements.

Section 7 provides a detailed description of the COTS hardware/network upgrades that are planned to begin during the January 2002 through June 2002 transition. This section references the terms and concepts outlined in section 3 to describe the rationale for the upgrade. Additionally, this section provides details related to the upgrade or recommended changes that may be useful to the DAAC's for long term planning.

Section 8 provides detail on COTS Hardware Upgrades.

2. Related Documents

2.1 Parent Documents

Parent documents are documents from which the ECS COTS Deployment Plan scope and content are derived.

334-CD-600	6A Science System Release Plan for ECS
334-CD-610	6B Science System Release Plan for ECS
335-CD-001	ECS COTS Deployment Plan, Volume 1
335-CD-002	ECS COTS Deployment Plan, Volume 2
335-CD-003	ECS COTS Deployment Plan, Volume 3
335-CD-004	ECS COTS Deployment Plan, Volume 4
335-CD-005	ECS COTS Deployment Plan, Volume 5
423-41-01	ECS Statement of Work
423-41-02	Functional and Performance Requirement Specification for the Earth Observing System Data and Information System (EOSDIS) Core System, Revision

2.2 Applicable Documents

The following documents are referenced within this COTS Deployment Plan for Volume 5. Upgrades are directly applicable. Additionally, this document may contain policies or other directives that are binding upon the content of this volume.

409-CD-600	ECS Overall Acceptance Test Plan for Release 6A
409-CD-610	ECS Overall Acceptance Test Plan for Release 6B
411-CD-600	ECS Acceptance Test Procedures for Release 6A
SE-1-025	ECS Project Instruction for the COTS Software Upgrade Process
TT-1-001	ECS Project Instruction for Acceptance Test Preparation, Execution, and Documentation

2.3 Information Documents

The following document(s), although not referenced herein and/or not directly applicable, do amplify or clarify the information presented in this document. These document(s) are not binding on the content of this volume.

101-CD-001 Project Management Plan for the ECS Project

3. COTS Upgrade Overview

3.1 COTS Upgrade Process Overview

Volume 6 of DID 335 provides information on upgrades that are scheduled or tentatively planned to be initiated through the period of 12/01/2001 through 06/30/2002. The COTS upgrade information detail that is available at the time of release of this volume is included in the following sections: Section 4, COTS Software Upgrades; Section 5, Solaris 8-Related Upgrades; Section 6, COTS Software Removals; Section 7, Post-Solaris 8 Upgrades; and Section 8, COTS Hardware Upgrades. Additional information and updates are also provided throughout the COTS upgrade process including:

- Weekly update and distribution of COTS Upgrade Team (CUT) Matrix (Refer to Appendix A for recent CUT Matrix)
- Solaris OS Upgrade for Sun Based Machines on the ECS Project documentation
- Weekly discussions with DAACs on hardware issues
- COTS PSRs.

The sections that follow summarize the process by which upgrades to ECS COTS products are identified. The identified COTS products are upgraded and deployed during the 6A and 6B System Release time frame. The specific risks mitigated with each COTS product are discussed in the detailed section addressing the specific COTS product.

3.2 Mitigating Risks

Various factors are included in identifying COTS products for upgrades, replacements or additions. ECS works to mitigate risks in multiple ways. Defects against a COTS product are identified and tracked in a manner similar to defects with custom code. COTS products also have additional potential risks that need to be considered in reducing scheduling and operational impacts that are inherent to COTS products. The efforts that ECS makes to mitigate both types of risk are discussed in the following sections.

3.2.1 Identification of Defect/NCRs

An NCR can be identified against a COTS product as well as against custom code. This process is discussed in ECS Project Instruction SD-1-014 and ECS Work Instruction MO-1-003-5. In many cases, risks related to the COTS product can be mitigated by custom code or configuration changes. There are occasions where risks identified in the NCR process are best mitigated by an upgrade of a COTS product. In some cases, patches are provided by the vendor that will sufficiently mitigate the risk. Other cases may warrant that the risk be mitigated by a versioned upgrade of the COTS product. When an upgrade is identified as the resolution to an NCR, a

patch or version upgrade is scheduled as soon as possible. In cases where the NCR is high impact, the COTS product upgrade may be “fast tracked” through the COTS upgrade process.

To mitigate risks that have been identified in the COTS vendor’s non-conformance process, patch bundles with fixes for identified problems are taken through the COTS Upgrade Process. Although these patch bundles may have fixes to problems that have not yet occurred in the ECS project, these bundles may also include “fixes” to items that have potential risk to occur within the ECS project environment. Unless a specific problem and a specific patch are identified to resolve an NCR, these patches are bundled for an upgrade to specific COTS products on a periodic basis. These patch bundle upgrades are usually limited to COTS with substantial impact such as operating systems and databases.

3.2.2 Vendor Support

Although some terms and concepts differ, support for the full life cycle has been implemented for both COTS software and hardware products in the ECS Project. A significant part of this concept is maintenance support for these COTS products. The process for renewing and funding software maintenance agreements is discussed in ECS Project Instruction IL-1-006. The discussion of “support” in this document refers to the technical support provided by the vendor under the ECS maintenance contract with the vendor, not the payment for the maintenance support.

3.2.2.1 COTS Software Support

Software support agreements for most COTS vendors include consultation, problem assistance, patches and upgrades. In any COTS product life cycle, there are points at which a product may be “supported” at a different level. This support level is usually identified by the COTS product having reached one of the following milestones in the COTS product life cycle:

- Specific version is identified by the vendor to have reached end-of-life.
- Specific version is identified by the vendor to have reached end-of-support.
- Product is merged/evolved to another product or is made obsolete.

Many large vendors have formulated very specific policies on these milestones and when they occur. Some of these are published on the vendor’s web site. Others will provide the criteria for these milestones, upon request. Other vendors have not defined a policy as would be preferred, but generally these are not COTS products with major impact for ECS.

Reaching any of these milestones has the potential to cause some level of risk to the project. To mitigate these risks, these milestones are tracked in the COTS Compatibility Matrix¹ and are updated on a quarterly basis. An overview of each of these milestones and their potential impact is provided in the following sections to serve as a reference for the upgrade discussions in

¹ An example of some of the compatibility information maintained in the COTS Compatibility Database is provided in Appendix B. The example identifies the Solaris 8 Baseline as it will appear on completion of the Solaris 8 Transition.

Sections 4 and 5. The CUT reviews these milestones for every COTS software product when identifying the upgrades for each rolling wave period.

3.2.2.2 COTS Software Product End-of-Life: Best Effort Support

COTS products are under active support for a period after release. The end-of-life policy among vendors differs considerably. The most common practice is to provide support for a specified number of older versions. The larger vendors with this type of support policy often support the most current version and the last two preceding it. Some vendors support only one preceding version from the most current version; while others actively support only the most current version.

It is important to note that when a COTS product reaches end-of-life, the product is “supported” by the vendor, but at a lower level than the products/versions the individual vendor considers “current”. While there is some level of support for the end-of-life version, there are typically no bug fixes or new code written for the end-of-life versions if the “problem” has been fixed in a more recent version.

This lower level of support is often called “best effort”: i.e., the vendor will make the best effort to address the problem without writing new code. If the problem that needs to be fixed has already been fixed in a later version, the “support” the vendor provides is to recommend an upgrade to the more “current” version. The longer the COTS product remains at end-of-life, the more likely that an upgrade will be recommended to fix the identified problem.

Some levels of end-of-life risk can be tolerated and, in the case of COTS vendors that have a very rapid end-of-life cycle, some risk may be prudently tolerated. The CUT team reviews the risk and the possible impacts when identifying the COTS upgrades for each rolling wave and mitigates the highest levels of risk possible with the COTS selected for upgrade.

3.2.2.3 COTS Software Product End-of-Support

Many COTS vendors identify an end-of-support date for versions of their COTS products. In some cases, often with the major operating system vendors, this occurs x number of years after the end-of-life date. Other COTS vendors, such as Sybase, usually give notice a year in advance, of when end-of-support will occur with a product version. In this case, there is no end-of-life phase, as the product will be actively supported until its support formally ends.

There are some vendors who do not have a defined end-of-support date, but the ability to obtain active support for resolution of problems with older versions decreases over time. There is greater risk that there will not be timely and effective resolution of problems that require “bug” fixes. The risk generally increases over time.

3.2.2.4 COTS Software Product Evolution or Obsolescence

There can be product consolidations and/or selling specific products that no longer adhere to a vendor’s product line. There have been a number of mergers among COTS product vendors in recent years that have also led to COTS software evolution or obsolescence.

COTS products are tracked to identify and mitigate risks that may be associated with any of the following:

- No new development done for a specific COTS product.
- Stand-alone product merged with other products that will no longer be available as a separate product.
- Product sold to a new vendor.

Some COTS products may have end-of-support risks associated not with a specific version, but with dependencies on other versions/models of COTS products, that are a variation on end-of-support dates for the primary COTS product. These risks are associated with cross product software compatibility and are discussed in more detail in the following section.

3.2.3 Cross Product Software Compatibility

In addition to the risks that may be associated with end-of-life and end-of-support dates for specific COTS products, risks associated with cross-product dependencies and compatibility are tracked to identify risk and risk mitigation steps. When upgrades are identified for any COTS product, a cross-product versioning support compatibility analysis is performed to identify any risks to the upgrade. The CUT team provides input on methods that may be considered to mitigate the identified risks. A consensus is reached on the most efficient method of mitigating the risk, balancing risk levels and available resources. The primary cross product compatibilities are discussed in the following sections and include:

- Operating System Version Compatibility
- Database Version Compatibility
- Compiler Version Compatibility
- Other COTS Product Compatibility
- Hardware/Software Product Compatibility

3.2.3.1 Operating System Version Compatibility

All COTS software is dependent on operating system (OS) versioning compatibility. COTS vendors identify the operating system versions that specific COTS product versions will support. In general, COTS vendors support the versions actively supported by the OS vendor and drop support for OS versions which have reached end-of-life or are near to end-of-life. Adding new OS versions and dropping end-of-life OS versions for a specific COTS product usually occur in a six month to eighteen month cycle, depending on the timing of the release of the new COTS product version.

Occasionally, a COTS vendor will announce that no new development/version is planned for one or more of the operating system platforms that are utilized for the COTS product. The CUT team identifies these risks and works to mitigate these risks in some of the following ways:

- Discussion with the vendor of the impacted COTS product.

- Discussion with the Operating System Vendor on the withdrawal of support for a specific OS.
- Identification of possible alternative operating system hosting.
- Identification of alternative COTS/Freeware product implementation.

The COTS Hardware/Software compatibilities are discussed in section 3.2.3.5.

3.2.3.2 Database Version Dependencies

A number of COTS products in ECS are dependent on a Sybase database version. It is typical that although Sybase may actively support several Sybase ASE and OpenClient versions at the same time, a COTS product might be certified for only one or perhaps two Sybase/OpenClient versions. In some cases, the vendor has not formally certified a specific Sybase version, but the vendor will support resolving problems with some other versions and/or report that customers are using a version and report no problems. On occasion, there are identifiable incompatibilities between a COTS product version and a Sybase database version. The CUT team identifies these potential risks and works to mitigate them. These may include:

- Identification of the actual level of risk (vendor information/EDF testing, etc.).
- Identification of COTS product upgrade that is certified or capable of supporting compatibility with the identified baselined (or to be baselined) version.
- Identification of alternative implementation (i.e., different operating system, script, etc.).

3.2.3.3 Compiler version compatibility

Some COTS products are certified with a compiler version for a specific OS. The level of support will be most complete if the certified compiler version is in use. Generally, only a single compiler version is certified for a specific OS version. The CUT team reviews upgrades to mitigate any identified risks associated with compiler version dependencies.

3.2.3.4 Other Compatibility Issues

The CUT team also identifies other potential risk factors associated with COTS products, including the following:

- Compatibility between related COTS products versions. For example, the RogueWave DBTools, Tools and ToolsPro products require compatible versions between the 3 libraries and also require compatible versions (same versions) across all OS platforms.
- Some COTS products have some dependencies on Motif versions and/or HDF versions.

3.2.3.5 Hardware/Software Compatibility

Hardware/software compatibility issues are identified and reviewed for risk and risk mitigation, including the following:

- Support for all planned and existing hardware devices will be available at the time of hardware upgrades.
- Hardware firmware is currently supported.

3.2.4 Features/Performance Upgrades

Some COTS upgrades are identified to address performance and/or new features/benefits. Functional and Performance specification requirements (F&PRS) are provided for the upgrades discussed in this document, when there is a change or impact to the current requirements met by the COTS products.

3.2.4.1 Performance

If performance risks are identified, the CUT team works to identify the necessary COTS upgrades/replacements or configuration changes to address the performance issues.

3.2.4.2 Features

If specific new features are required by ECS Development Organization or operational sites for a COTS product and/or the project, the CUT team reviews the requirements and identifies a COTS upgrade to provide the required features.

3.2.4.3 Hardware Support

As part of the COTS Life Cycle Implementation, ECS provides maintenance for hardware products deployed to the DAACs. Firmware maintenance is included with hardware maintenance support. Hardware maintenance for failed components is addressed with individual Maintenance Work Orders (MWO).

Hardware and firmware products can reach end-of-life and/or end-of-support, just as software products may reach this stage. Replacement or upgrade support for hardware components as a class or individually is not covered by standard industry hardware maintenance contracts. Hardware replacements and upgrades generally require procurement of new or additional components.

Risk for some hardware components that have reached end-of-life can be or are mitigated by availability of a pool of hardware components in case replacement is necessary prior to a planned hardware upgrade.

In some cases, a hardware vendor may identify that equipment will no longer be supported after a certain date. In cases where there are other hardware, software and/or firmware dependencies that cause risks for the ECS Project, a migration or replacement to supported hardware devices are required to mitigate risks.

3.3 Conservation of ECS Resources

In considering COTS upgrades (Hardware and Software), CUT team participants and other ECS personnel strive to conserve ECS resources, whenever possible, including the following:

- Streamlining or consolidation of development and deployment activities.
- Reduction of COTS upgrade support activities, which may in turn enable reduction of associated PSR support, installation support and testing support for COTS upgrades.
- Reduction of software maintenance costs.
- Reduction of hardware maintenance costs.

Activities that are considered to have potential to conserve ECS resources are evaluated and implemented when it is identified that these actions will result in minimal risk to the project.

In support of conservation of ECS resources, the goal is to:

Simplify the ECS system, retire the obsolete COTS software and hardware and decrease the number of software licenses to reduce the operational cost.

3.4 R6 σ (Sigma) COTS Software Upgrade Process Improvement

A Raytheon 6 σ (Sigma) COTS Software Upgrade Process Improvement project is working on improving the efficiency and effectiveness of the current COTS software upgrade process. The following activities are targeted with this goal in mind:

- Make the updates to baseline process efficient.
- Develop a case to have a single COTS software POC for all products in development.
- Monitor the improvement in the CCR process, performed by another group, and its impact to the COTS software upgrade process.
- Develop an efficient way to develop installation instructions.
- Plan PSR process training for all personnel working on COTS software upgrade.
- Evaluate the structure of internal walk-throughs.
- Develop a case to have the COTS software POC in each department authority to enter the Primavera schedule for COTS software upgrade activities.
- Identify and document the impact to the system due to a certain COTS software upgrade.
- Identify and document dependency of the custom code on a COTS software upgrade.
- Develop a process for streamlining the testing of COTS software products in the Functionality Lab.
- Develop a process for streamlining the testing of COTS software products in VATC.
- Update the COTS software upgrade process PI and WI.
- Identify and implement changes in the PSR document.
- Identify and implement changes in DID 335.

3.5 COTS Upgrade Summary

Table 3-1 provides a summary of the planned COTS hardware and software upgrades and identifies any dependencies in these upgrades. Estimated completion schedules are also provided. Details of the COTS software upgrades/migrations that will occur prior to the Solaris 8 upgrade are provided in section 4, COTS Software Upgrades. Details of the Solaris 8 Upgrades are provided in section 5, Solaris 8-Related Upgrades. Post Solaris Upgrades and planned product removals are briefly discussed in sections 6 and 7 respectively. Details of the COTS Hardware Upgrades are provided in Section 8, COTS Hardware Upgrades.

Table 3-1. COTS Hardware/Software Upgrades Summary (1 of 2)

COTS Product	Baseline Version	Upgrade Version	Dependencies/Installation Sequence Requirements	Criticality for Operational Support	NCR	Targeted Completion
Firewall Implementation	N/A	Portus 4.0 IBM AIX 4.3.3 eBorder Server 3.0.5	Compatible hardware and software will be bundled.	High		Starting 01/2002 at NSIDC
StorEdge Volume Manager	2.6	3.0.4	None	Low		01/2002 (est.)
Tivoli DM/SD	3.6	3.6.2	Tivoli Management Framework 3.6.3	Low		01/2002
PDS Turnover to ECS	N/A	---	Turnover to ECS targeted with PDS Phase 4.	Low		01/2002
SWGDP TP9400 Upgrades	N/A	---	SGI RAID Software Upgrade/IRIX 6.5.9 Upgrades	Low		01/2002
SGI RAID Software Upgrade	N/A	TPSSM7	SWGDP TP9400 RAID	Low		01/2002
AIRS	N/A	AIRS processing	SWGDP TP9400 RAID	Medium		02/2002
Open Client	11.1.1	11.1.1 EBF	6A_05 custom code delivery	High		01/2002
Solaris 2.5.1 Patch Bundle	N/A	N/A	6A_05 custom code delivery	High		01/2002
AMASS	5.0	5.1.1	None	High		01/2002
SQS	3.2.2	3.4.2	None	Medium		02/2002
ClearCase	3.2.1	4.1	None	Low		04/2002
BDSpro	2.1p0	2.3	None	Medium		02/2002

Table 3-1. COTS Hardware/Software Upgrades Summary (2 of 2)

COTS Product	Baseline Version	Upgrade Version	Dependencies/Installation Sequence Requirements	Criticality for Operational Support	NCR	Targeted Completion
NTP (Network Time Protocol)	N/A – new	4.099k23	Time Service for Sockets/DCE Replacement	Medium		3/2002
Solaris 8 Hardware Upgrades	N/A	N/A	TBD	High		04/2002
Solaris Operating System Upgrade & Transition	2.5.1	8	Per product dependencies and schedules provided in section 5, Solaris 8-Related Upgrades	High		4/2002
Dashboard Hardware Upgrades	N/A	N/A	Solaris 8 OS Upgrade	Medium		05/2002
Post Solaris Upgrades	Per Product	Per Product	Per product dependencies and schedules provided in section 7, Post-Solaris 8 Upgrades	High		Per product dependencies and schedules provided in section 7, Post-Solaris 8 Upgrades

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4. COTS Software Upgrades Prior to Solaris 8 Transition

This section identifies the COTS software products that will be upgraded from Solaris 2.5.1 and includes the rationale used to justify this upgrade. Some product upgrades are required on IRIX 6.5.x for compatibility reasons.

Some of the COTS products identified in this section will be upgraded to a version that is compatible with both Solaris 2.5.1 and Solaris 8 in order to mitigate as much risk as possible with the Solaris 8 Transition. Other COTS upgrades are targeted only for Solaris 2.5.1. COTS products supporting only Solaris 8 are addressed in section 5 of this document. For perspective on all Solaris 8-related upgrades, Tables 5-1 through 5-4, located at the beginning of section 5, provides summaries of all categories related to Solaris 8 Upgrades in this document.

4.1 Open Client 11.1.1 (EBF9798)

4.1.1 Description of COTS

Open Client provides a portable, standard interface for client applications, which need to communicate with a Sybase SQL Server. Open Client includes both DBLIB and CTLIB libraries. Open Client supports:

- code portability between supported operating systems
- network transparency
- code modularity

4.1.2 Rationale for Upgrade

An “assertion failed SDSRV core dumps” problem was identified during 6A_05 custom code testing. DDM identified that the error could be resolved with a very recently released EBF, #9798. Testing confirmed that EBF9798 for Sybase Open Client 11.1.1 would resolve the problem. Open Client should be delivered with or prior to 6A_05 Custom Code Release.

4.1.2.1 Vendor Support

Vendor had released an Emergency Bug Fix (EBF) to address the problem experienced during testing.

4.1.2.2 NCRs

NCR ECSed32522 will be resolved with delivery of this EBF for Open Client 11.1.1.

4.1.2.3 Features/Performance Upgrades

No additional performance or features are expected with this EBF for Open Client 11.1.1.

4.1.2.4 Cross Software Product Compatibility

There are no software compatibility issues associated with this EBF for Open Client 11.1.1..

4.1.2.5 Operating System Compatibility

Although Sybase Open Client 11.1.1 (EBF9798) is technically capable of running on Solaris 8, because Open Client 12.0 will be used for Solaris 8 custom code builds, Open Client 11.1.1 (EBF9798) will not be compatible with Solaris 8. Open Client 12.0 will replace Open Client 11.1.1 (EBF9798) in the Solaris 8 baseline.

4.1.2.6 Hardware Product Compatibility

There are no hardware compatibility issues associated with this EBF for Open Client 11.1.1.

4.1.3 Operational Impact

No operational impacts have been identified beyond installation downtime and impacts identified in the PSR.

4.1.4 Custom Code Impact

The upgrade is intended to correct a problem with 6A_05 custom code encountered during testing.

4.1.5 Security Impact

No security impacts have been identified for this COTS product.

4.1.6 Licensing Impact

No impact to current licensing will occur with delivery of EBF9798.

4.1.7 External Drivers

No external drivers have been identified.

4.1.8 Other Impacts/Comments

No other impacts have been identified.

4.1.9 COTS Installation Sequence/Dependencies

Sybase Open Client 11.1.1 (EBF9798) should be installed prior to installation of 6A_05 custom Code.

4.2 Patch Bundle for Solaris 2.5.1 (6A_05)

4.2.1 Description of COTS

Patches to fix bugs are provided by the Operating System vendor. Patches are applied to correct identified problems or security vulnerabilities.

4.2.2 Rationale for Upgrade

In testing for release 6A_05, a build/compile problem was identified. The problem was corrected by Sun patch # 106529-08, Shared library patch for C++. NCR ECSed31957 was generated when this error was detected. Delivery of patch will resolve NCR.

Two additional low impact security patches that were identified by the Security Group as critical were added to form a Solaris 2.5.1 patch bundle. These included:

- Patch 103663-16 which addresses vulnerabilities in the Domain Name System (DNS) 'in.named' that may allow remote access to Superuser (root))
- Patch 105165-04 which addresses vulnerabilities with Buffer overflow in ypbind(1M) in Solaris 2.5.1.

4.2.2.1 Vendor Support

Vendor support is not an issue for this upgrade.

4.2.2.2 NCRs

NCR ECSed31957 was generated when the compile/build error was detected. Patch delivery has resolved NCR.

4.2.2.3 Features/Performance Upgrades

No additional performance or features are expected with this upgrade other than NCR resolution and mitigation of identified security vulnerabilities.

4.2.2.4 Cross Software Product Compatibility

There are no software compatibility issues associated with this upgrade.

4.2.2.5 Operating System Compatibility

Patches delivered with this PSR are applicable to Solaris 2.5.1 only. A new patch baseline will be identified for Solaris 8 and will replace all Solaris 2.5.1 patches. These patches are not backward compatible.

4.2.2.6 Hardware Product Compatibility

There are no hardware compatibility issues associated with this upgrade.

4.2.3 Operational Impact

No operational impacts have been identified beyond installation downtime and impacts identified in the PSR.

4.2.4 Custom Code Impact

Patches will resolve custom code NCR ECSed31957.

4.2.5 Security Impact

In addition to the patch to resolve NCR ECSed31957, the Security Group has identified two security patches for inclusion in the Solaris 2.5.1 Patch Bundle:

- Patch 103663-17 addresses vulnerabilities in the Domain Name System (DNS) 'in.named' that may allow remote access to Superuser (root))
- Patch 105165-04 addresses vulnerabilities with Buffer overflow in ypbind(1M) in Solaris 2.5.1.

4.2.6 Licensing Impact

There are no license impacts with this Solaris 2.5.1 Patch Bundle PSR.

4.2.7 External Drivers

No external drivers have been identified for this COTS product.

4.2.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.2.9 COTS Installation Sequence/Dependencies

Installation should occur with or prior to installation of 6A_05 Custom Code.

4.3 Network Time Protocol (NTP)

4.3.1 Description of COTS

NTP is a freeware product used to synchronize time across a set of computers. NTP will be used for this service on Solaris hosts with the removal of DCE and DCE Time Services. On SGI IRIX hosts, the *timed* utility will be utilized to communicate with the NTP server implementation on Solaris to provide Time Services across both Solaris and IRIX.

4.3.2 Rationale for Upgrade

A Time Service is needed to replace DCE Time Services, which will be removed with all other DCE services with release 6A_05. NTP and the IRIX operating system utility *timed* will provide a Time Service for Sockets.

4.3.2.1 Vendor Support

NTP is a freeware product. The upgrade will be to the most recent release available.

4.3.2.2 NCRs

No NCRs are associated with this upgrade.

4.3.2.3 Features/Performance Upgrades

No additional features or performance gains are expected with this upgrade.

4.3.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues. The IRIX 6.5 *timed* utility is compatible with the Solaris NTP implementation. The PSR process for NTP will include testing and documentation on configuring *timed* to work with the Solaris NTP implementation.

DCE Time Services and NTP cannot function and accurately be tested at the same time. Removal of DCE, including DCE Time Services, is planned prior to delivery of NTP. A DCE Removal Engineering Technical Directive has been drafted and will be tested in the PVC as part of the delivery of NTP. The DCE Removal Engineering Technical Directive will be delivered and coordinated with the NTP PSR delivery.

4.3.2.5 Operating System Compatibility

The NTP version delivered for 6A_05 has been compiled and tested with Solaris 2.5.1. A new version will be needed for Solaris 8. The Solaris 8 version will be the NTP version bundled with the Solaris 8 Operating System and will not be separately PSRed.

4.3.2.6 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

4.3.3 Operational Impacts

The 6A_05 Sockets Release and Transition documentation, as well as the NTP PSR and DCE Removal Engineering Technical Directive, will address operational impacts related to the replacement of DCE and DCE Time Services with release 6A_05 Sockets and NTP Time Services.

4.3.4 Custom Code Impact

No custom code impacts are expected.

4.3.5 Security Impact

No security impacts have been identified for this COTS product.

4.3.6 Licensing Impact

There are no licensing impacts. NTP is freeware product.

4.3.7 External Drivers

Removal of DCE Time Services are required for implementation. The 6A_05 Transition will address these issues.

4.3.8 Other Impacts/Comments

IRIX 6.5.x *timed* utility needs to be configured to work with NTP to support Time Services on IRIX, when NTP is installed and configured. The NTP PSR will address this configuration.

4.3.9 COTS Installation Sequence/Dependencies

DCE and DCE Time Services need to be removed in coordination with installation and configuration of NTP on Sun and *timed* on SGI. The process will be addressed in 6A_05 transition documents, DCE Removal Engineering Technical Directive and the NTP PSR.

4.4 AMASS 5.1.1

4.4.1 Description of COTS

AMASS is a COTS product from ADIC that provides File Storage Management System capabilities for ECS. The AMASS provides support for STK Powderhorn and Wolfcreek tape libraries and STK T9940 tape drives.

4.4.2 Rationale for Upgrade

Upgrade to version 5.1.1 of AMASS is planned to resolve the following NCRs:

Table 4-1. AMASS NCRs

NCR #	SEV	ST	Problem	Site
31286	2	V	AMASS/ACSLs Communication Errors	PVC
32059	2	C	All STMGT servers hang when archive runs out of fnodes	PVC
31925	2	V	Files missing from AMASS archive	LaRC
29999	3	V	AMASS 5.0 amassbackup -d command fails	PVC
21904	3	R	Restore command causes all volumes to marked FULL	GSFC
26677	3	R	AMASS 'ls' command does not always list all files in directory	EDC
30000	3	B	Space Pool Incompatibilities	GFSC

4.4.2.1 Vendor Support

Problems had been identified with AMASS 5.0 and ADIC had issued the following alert against AMASS 5.0.

- #AU81: For tape drives only, the optional feature Streaming IO (SIO) may cause data corruption.

Based on this alert an upgrade was planned to version 5.1, which had been released at the time of the AU#81 Alert. The following Alert was issued against version 5.1.

- #AU82: Stopping AMASS 5.1 can cause data loss.

The MS IPT Team consulted with the vendor (ADIC) and a fix for this problem and other identified problems were to be fixed in release 5.1.1. Work was started as soon as version 5.1.1 was released.

4.4.2.2 NCR

The NCRs against the AMASS product are identified in Table 4-1 in the upgrade Rationale section above.

4.4.2.3 Features/Performance Upgrades

No additional features or increased performance is expected with this upgrade.

4.4.2.4 Cross Software Product Compatibility

No software product compatibilities have been identified with this COTS product.

4.4.2.5 Operating System Compatibility

AMASS 5.1.1 is certified on IRIX 6.5.6 through IRIX 6.5.11 by ADIC. SGI, based on its binary compatibility mandates, maintains that software certified at one minor release, i.e., 6.5.6, should run correctly on any IRIX 6.5.x release. Additional information on the SGI mandate may be obtained at:

http://techpubs.sgi.com/library/dynaweb_bin/ebt-bin/0650/nph-inforsrch.cgi/inforsrchtpl/SGI_Developer/mandate_IRIX/@InfoSearch_BookTextView/8

4.4.2.6 Hardware Product Compatibility

Software version 5.1.1 has no hardware product compatibility issues.

4.4.3 Operational Impact

No operational impacts have been identified beyond installation downtime and impacts identified in the PSR.

4.4.4 Custom Code Impact

No custom code impacts have been identified with this COTS upgrade.

4.4.5 Security Impact

No Security impacts have been identified for this upgrade version.

4.4.6 Licensing Impact

Product requires license keys. These will be requested with the upgrade media and will be provided in the PSR document.

4.4.7 External Drivers

No external drivers have been identified for this COTS product upgrade.

4.4.8 Other Impacts/Comments

No other impacts have been identified with this COTS product.

4.4.9 COTS Installation Sequence/Dependencies

No installation sequence dependencies or other COTS product dependencies have been identified for this COTS product.

4.5 ClearCase 4.1

4.5.1 Description of COTS

ClearCase combines comprehensive software configuration management (SCM) — including version control, workspace management, process control and build management — with a uniquely transparent, non-intrusive approach. With ClearCase, development teams can accelerate development cycles, ensure the accuracy of releases, reliably build and patch previously shipped products, and organize an automated development process — all without changing their environment or their tools.

4.5.2 Rationale for Upgrade

End of support for version 3.2.1 is the primary driver for the ClearCase upgrade. Support for IRIX 6.5.9 and Solaris 8 are also factors driving the upgrade.

4.5.2.1 Vendor Support

ClearCase version 3.2.1 reached end of support as of 06/01/2001. This version also does not support Solaris 8. Version 3.2.1 runs without problems on IRIX 6.5.9, but is not officially supported by the vendor. An upgrade is required to support Solaris 8 and to be supported by the vendor on Solaris 8.

4.5.2.2 NCRs

NCR ECSed30275 has been issued against ClearCase 3.2.1 because of end of support of this version by the vendor. Upgrade will resolve the NCR.

4.5.2.3 Features/Performance Upgrades

No additional features or performance gains are expected with this upgrade.

4.5.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

4.5.2.5 Operating System Compatibility

ClearCase 4.1 is compatible with both Solaris 2.5.1 and Solaris 8.

4.5.2.6 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

4.5.3 Operational Impacts

No operational impacts have been identified beyond installation downtime and impacts identified in the PSR.

4.5.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

4.5.5 Security Impact

No security impacts have been identified for this COTS product.

4.5.6 Licensing Impact

License keys are required for this COTS product. Procedures to obtain/install the license keys will be included with the PSR.

4.5.7 External Drivers

No external drivers have been identified.

4.5.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.5.9 OTS Installation Sequence/Dependencies

No installation sequence dependencies or other COTS product dependencies have been identified for this COTS product.

4.6 Tivoli Distributed Monitor/Software Distribution 3.6.2

4.6.1 Description of COTS

Tivoli is a COTS enterprise management framework application which:

- monitors the status of networked devices, hosts and processes that run on the hosts.
- provides a central console for monitoring the enterprise
- provides an extensible framework to customize as needed.

4.6.2 Rationale for Upgrade

Solaris 8 compatibility are the primary upgrade drivers. At the time of the HP Migration, Tivoli had not certified any of the ECS Tivoli components for Solaris 8. At that time, only the 3.7 versions and beyond were certified for Solaris 8. However, the vendor has recently certified the current Tivoli Management Framework version 3.6.3 and the Enterprise console 3.6.2, that were upgraded for Sybase ASE 11.9.2 compatibility, for Solaris 8. The two remaining Tivoli components, Distributed Monitoring and Software Distribution have also been certified for Solaris 8 at versions 3.6.2. ECS is currently at version 3.6 for both of these products.

In order to reduce the complexity of the Solaris 8 upgrade, an upgrade of Distributed Monitoring and Software Distribution to version 3.6.2 is planned. This upgrade will be relatively low impact if completed on Solaris 2.5.1. With this upgrade, the Tivoli Client/Server implementation on Solaris 2.5.1 will be compatible and certified for Solaris 8.

A post-Solaris upgrade of Tivoli is planned to mitigate end of life risks that will occur 04/2002. This post-Solaris Tivoli Client/Server upgrade is discussed in Section 7.1, Tivoli Server/Client.

4.6.2.1 Vendor Support

Vendor has certified Distributed Monitoring and Software Distribution 3.6.2 for Solaris 8. Current 3.6 versions of these products are not certified for Solaris 8. End of life for these versions will not occur until 4/2002 at the earliest.

4.6.2.2 NCRs

No NCRs are identified in association with this COTS product.

4.6.2.3 Features/Performance Upgrades

No additional features or performance enhancements are expected from this upgrade, except Solaris 8 compatibility. This will reduce risk and complexity of Solaris 8 Transition because of the broad impact and sequence dependency of a Tivoli upgrade to a Solaris 8-only version.

4.6.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues. These upgrades are compatible with Sybase ASE 11.5.1 and 11.9.2. The post-Solaris upgrade mentioned above is planned for support of Sybase ASE 12.5 by all Tivoli components.

4.6.2.5 Operating System Compatibility

All Tivoli modules, the upgrades delivered during the HP Migration and the Distributed Monitoring and Software Distribution described in this section are compatible with both Solaris 2.5.1 and Solaris 8, i.e., they are backward and forward compatible.

4.6.2.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product.

4.6.3 Operational Impact

Operational impact would be minimized by upgrade of two remaining Tivoli modules on Solaris 2.5.1, rather than upgrading all Tivoli components during the Solaris 8 Transition.

4.6.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

4.6.5 Security Impact

No security impacts have been identified for this COTS product.

4.6.6 Licensing Impact

There are no licensing issues with this software. License keys are required and will be addressed in the PSR.

4.6.7 External Drivers

No external drivers have been identified for this COTS product.

4.6.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.6.9 COTS Installation Sequence/Dependencies

No installation sequence dependencies or other COTS product dependencies have been identified for this COTS product, other than the installation sequences identified in the PSR among the Tivoli modules.

4.7 WhatsUp Gold 7.0

4.7.1 Description of COTS

WhatsUp Gold is COTS product which provides network administrators with tools to map and monitor their networks. Along with user-defined, periodic polling of work devices and applications, WhatsUp Gold provides network resource and capacity management through real-time SNMP threshold monitoring. WhatsUp Gold looks at router tables and automatically discovers and maps devices according to the network's hierarchy, with separate maps for each sub-network.

4.7.2 Rationale for Upgrade

This COTS product will meet many of the requirements that had been associated with the HP OpenView Product, which was removed during the HP Migration. Product is needed to address level 3 and level 4 requirements with the removal of HP OpenView.

4.7.2.1 Vendor Support

Vendor support is not an issue for this upgrade.

4.7.2.2 NCRs

No NCRs are outstanding for this COTS product.

4.7.2.3 Features/Performance Upgrades

No additional performance or features are expected with this upgrade.

4.7.2.4 Cross Software Product Compatibility

There are no software compatibility issues associated with this upgrade. There are no known dependencies on another ECS COTS product or dependency of this product on other COTS product other than the Operating System, which is addressed in the following section.

4.7.2.5 Operating System Compatibility

Version 6 of the COTS product supports Windows 95, Windows 98, Windows NT 4.0 SP6 or later, Windows 2000, Windows ME. Product will be able to migrate to most recent Windows operating systems should there be a PC operating system upgrade required.

4.7.2.6 Hardware Product Compatibility

There are no hardware compatibility issues associated with this upgrade.

4.7.3 Operational Impact

No operational impacts have been identified with installation on the M&O LAN. Product is currently targeted for installation on the M&O Network Administrator's PC. The Architect's Office and Chief Engineering have reviewed this issue and have agreed that there is no objection to installation on the M&O LAN.

4.7.4 Custom Code Impact

There are no custom code impacts identified for this upgrade.

4.7.5 Security Impact

No security impacts have been identified for this COTS product. However, because of the nature of the product and the current plans to install on the M&O LAN and monitor the Production LANs, some issues, related to the Security Firewall are also being worked. Refer to section 4.7.7, External Drivers for additional details on this.

4.7.6 Licensing Impact

License keys are required for this COTS product. Procedures to obtain/install the license keys will be included with the PSR.

4.7.7 External Drivers

With the planned installation on the Network Administrator's PC on the M&O LAN for convenience and efficiency reasons, some potential firewall issues have been identified. The Firewall Team has an initial design to mitigate these issues. Design cannot be tested until Firewall installation at GSFC is completed. PSR will not be released until this issue and the Architect's Office decision are finalized.

4.7.8 Other Impacts/Comments

Current plans are to baseline WhatsUp Gold on the COTS Software Version Baseline with comment that software is installed on Network Administrator's PC on the M&O LAN. Since the M&O LAN is not baselined by CM, the software will not appear mapped to specific machines.

4.7.9 COTS Installation Sequence/Dependencies

No installation sequence or other dependencies have been identified with this COTS product.

4.8 SGI BDSpro 2.3

4.8.1 Description of COTS

BDS (Bulk Data Service)pro 2.1 is lightweight version of the popular NFS (Network File System) 3.0 that enables very high speed transfer of data using HiPPI interfaces on SGI Challenge systems. Simply stated, BDS is an important tool to provide the network throughput between the high powered systems that will enable ECS to meet performance requirements.

4.8.2 Rationale for Upgrade

Resolves the Filecopy Error 22 problems identified in NCR ECSed31678. NCR ECSed 32157 is also expected to be resolved with this upgrade. Upgrade may also contribute to the resolution of NCR 32081, which also involves HiPPI problems.

4.8.2.1 Vendor Support

Vendor support is not an issue for this upgrade.

4.8.2.2 NCRs

NCR ECSed31678 is expected to be resolved by BDSpro 2.3 upgrade. NCR ECSed 32157 is also expected to be resolved with this upgrade. Upgrade may also contribute to the resolution of NCR 32081, which also involves HiPPI problems.

4.8.2.3 Features/Performance Upgrades

No additional performance or features are expected with this upgrade.

4.8.2.4 Cross Software Product Compatibility

There are no software compatibility issues associated with this upgrade.

4.8.2.5 Operating System Compatibility

BDSpro 2.3 will be supported on all 6.5.x patch releases.

4.8.2.6 Hardware Product Compatibility

There are no hardware compatibility issues associated with this upgrade.

4.8.3 Operational Impact

No operational impacts have been identified beyond installation downtime and impacts identified in the PSR.

4.8.4 Custom Code Impact

There are no custom code impacts identified for this upgrade.

4.8.5 Security Impact

No security impacts have been identified for this COTS product.

4.8.6 Licensing Impact

There are no license impacts with this COTS product.

4.8.7 External Drivers

No external drivers have been identified for this COTS product.

4.8.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.8.9 COTS Installation Sequence/Dependencies

No installation sequence or other dependencies have been identified with this COTS product.

4.9 Spatial Query Server (SQS) 3.4.2

4.9.1 Description of COTS

Spatial Query Server (SQS) is a state-of-the-art, multithreaded database engine which supports:

- the definition of spatial datatypes (e.g., point, line, polygon)
- a set of spatial operations for these datatypes (e.g. intersect, inside, outside)
- a spatial indexing schema for efficient data retrieval

4.9.2 Rationale for Upgrade

The major driver for upgrade is announced end of support date for SQS version 3.2.2: March 30, 2002.

4.9.2.1 Vendor Support

Support of version 3.2.2 is targeted to end March 2002. Release of new version triggered end of support for the 3.2.x versions. Vendor released version 3.4 in November 2000. The new release version was shipped and initial work was initiated to integrate the product into the ECS environment. In February 2001, when certain problems were identified with the initial effort, the vendor recommended waiting for bug fixes that would be available in version 3.4.1 targeted for a

mid-April release. Version 3.4.1 was released as GA (Generally Available) on schedule in mid-April, 2001. During the summer of 2001, this version was identified as a beta version. Work was stopped until a GA version would be available. Release of version 3.4.2 was delayed from original target of 09/30/2001 until 10/31/2001 to work on some Sybase 12.5 compatibility problems. Software was released Oct. 31, 2001. Version 3.4.2 has been received and upgrade planning is in progress.

4.9.2.2 NCRs

The Table 4-2 presents the NCRs that are outstanding for SQS version 3.2.2 at time document release. These NCRs will be worked toward resolution and closure in the testing of the version upgrade if they are not closed previously.

Table 4-2. SQS NCRs

NCR ID	Severity	Title
ECSed22897	3	SQS 3.2.2 does not forward all error messages to its log file
ECSed21487	4	SQS 3.2.2 (2): 'llbox template' and 'SDT_set template vs llbox' errors

4.9.2.3 Features/Performance Upgrades

No additional features or performance gains are expected with this upgrade.

4.9.2.4 Cross Software Product Compatibility

Compatibility with Sybase OpenClient 12.0 has been identified by the vendor. OpenClient 12.0 is in turn compatible with all planned Sybase ASE upgrades on SGI: 11.9.3 and the Post-Solaris Sybase ASE 12.5 upgrade for SGI.

4.9.2.5 Operating System Compatibility

Upgrade version is supported on IRIX 6.5.x.

4.9.2.6 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

4.9.3 Operational Impacts

No operational impacts have been identified beyond installation downtime and impacts identified in the PSR.

4.9.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

4.9.5 Security Impact

No security impacts have been identified for this COTS product.

4.9.6 Licensing Impact

License keys are required for this COTS product. Procedures to obtain/install the license keys will be included with the PSR.

4.9.7 External Drivers

No external drivers have been identified.

4.9.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.9.9 COTS Installation Sequence/Dependencies

No installation sequence dependencies or other COTS product dependencies have been identified for this COTS product.

4.10 StorEdge Volume Manager 3.0.4

4.10.1 Description of COTS

StorEdge Volume Manager builds volumes on top of physical disks to provide a set of volume management capabilities such as disk striping and mirroring. Volume Manager objects can be manipulated in a variety of ways to optimize performance, provide redundancy of data, and perform backups or other administrative tasks on one or more physical disk without interrupting applications. As a result, data availability and disk subsystem throughput are improved.

4.10.2 Rationale for Upgrade

The primary drivers for this upgrade are end of support for current version and support for initial phases of the Solaris 8 Transition. Version 3.04 is the latest version that supports both Solaris 2.5.1 and Solaris 8. In order to facilitate roll-back and other possible transition-related capability with minimal impact, this version of StorEdge Volume Manager will be used. After the Solaris 8 Transition is stabilized, an upgrade to StorEdge Volume Manager 3.2 will take place as a Solaris 8 upgrade (refer to section 5: StorEdge Volume Manager 3.2). This final upgrade is needed because hardware-related patches that are current needed are not available for the 3.04 version.

4.10.2.1 Vendor Support

The current baseline version (2.6) has reached end of support. The current version also does not provide support for Solaris 8. Version 3.04 was identified as the targeted StorEdge Volume Manager version. This version has been targeted because it supports both Solaris 2.5.1 and Solaris 8. Support of both operating system versions will provide flexibility in defining transition approaches without reinstallation and possible loss of data. An upgrade to 3.2 will be required when the Solaris 8 transition is stabilized. Refer to section above and section 7: StorEdge Volume Manager 3.2.

4.10.2.2 NCRs

No NCRs are associated with this upgrade.

4.10.2.3 Features/Performance Upgrades

No additional features or performance gains are expected with this upgrade.

4.10.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

4.10.2.5 Operating System Compatibility

Version 3.04 is compatible with both Solaris 2.5.1 and Solaris 8.

4.10.2.6 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

4.10.3 Operational Impacts

No operational impacts have been identified beyond installation downtime and impacts identified in the PSR.

4.10.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

4.10.5 Security Impact

No security impacts have been identified for this COTS product.

4.10.6 Licensing Impact

License keys are required for this COTS product. Procedures to obtain/install the license keys will be included with the PSR.

4.10.7 External Drivers

No external drivers have been identified.

4.10.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.10.9 COTS Installation Sequence/Dependencies

No installation sequence dependencies or other COTS product dependencies have been identified for this COTS product.

4.11 Product Distribution System (PDS) COTS Turnover

4.11.1 Description of COTS

PDS is a GOTS (Government Off-the-Shelf) Product Distribution System targeted for implementation at all DAACs. Turnover of the PDS hardware and software is currently in progress. The COTS products used with PDS will be supported and upgraded within the COTS upgrade process. Table 4-3 identifies the new COTS software products and/or versions that will be added to the COTS upgrade process.

Table 4-3. New COTS Software at PDS Turnover

Product	Version	PDS Host	Platform/OS	Deployment
Oracle Enterprise 8I	8.1.7 ²	PDS Server	IRIX 6.5.9m	OPS
Oracle Developer	1.6.1	PDS Server	IRIX 6.5.9m	DEV
NT	4.0SP6	PDS QA Server	NT 4.0SP6	OPS
CD-R Data Publisher Power Tools	3.4.2	PDS Rimage Server	NT 4.0SP6	OPS
NT	4.0SP6	PDS Rimage Server	NT 4.0SP6	OPS
CD-R Production Server	1.31	PDS Rimage Server	NT 4.0SP6	OPS
CD-R Workstation	3.34	PDS Rimage Server	NT 4.0SP6	OPS
Interdrive	5.0	PDS Rimage Server	NT 4.0SP6	OPS
Perfect Image CD Designer	6.00b	PDS Rimage Server	NT 4.0SP6	OPS
TimeServ	4.0SP6	PDS Rimage Server	NT 4.0SP6	OPS
Label Editor	1.1.3j	PDS Rimage Server	NT 4.0SP6	OPS
Java for SGI	1.3.0	PDS Server	IRIX 6.5.9m	OPS

4.11.2 Rationale for Upgrade

Rationale is to provide additional distribution requirements. Product Distribution System (PDS) for DAAC utilization will also include DVD distribution in FY 02. Distribution cannot not supported on the new media types (CD-R and DVD) without PDS. The science community has been waiting for these media types to be supported.

4.11.2.1 Vendor Support

There is one end-of-support issue that needs to be noted for future upgrades. Oracle Enterprise 8I Database currently implemented with PDS on IRIX will have one more new release (8.1.7) on

² The PDS Group is planning upgrade of Oracle 8.1.6 to 8.1.7 prior to turnover completion.

SGI IRIX 6.5. This will be the last release on SGI. Oracle has confirmed that product no internal or external Error Correction Desupport date has been identified for Oracle 8.1.7. Oracle estimates base on this that 12/2002 is the earliest Error Correction Desupport date for this version on SGI 6.5.

4.11.2.2 NCRs

NCR against PDS are being worked as part of the PDS Turnover.

4.11.2.3 Features/Performance Upgrades

Capability to support CD-R and DVD are provided.

4.11.2.4 Cross Product Compatibility

There are no identified cross-product compatibility issues.

4.11.2.5 Operating System Compatibility

There are no planned operating system upgrades that will impact operating system compatibility.

4.11.2.6 Hardware Product Compatibility

The proposed PDS components are implemented in a compatible hardware/software environment.

4.11.3 Operational Impacts

There should be no additional operational impacts at turnover to the DAACs, as the PDS installations have been completed.

4.11.4 Custom Code Impacts

PDS custom code is being integrated with PDS COTS products as part of turnover.

4.11.5 Security Impact

No security impacts have been identified for this COTS product.

4.11.6 Licensing Impact

Installations at DAACs have been completed and licenses keys provided when required at DAAC sites, PVC and VATC. Installation in additional EDF environments, such as the IDG Cell and DDM are planned so that the PDS COTS hardware and software can be supported.

4.11.7 External Drivers

No external drivers have been identified.

4.11.8 Other Impacts/Comments

No other impacts have been identified.

4.11.9 COTS Installation Sequence/Dependencies

Installation sequence and dependencies are identified in the PDS PSR document, 914-TDA-151_Rev2.

4.12 Dashboard COTS Software Status

4.12.1 Dashboard as DUE

In recent rolling wave planning, it was identified that Dashboard would remain a DAAC Unique Extension (DUE) and a turnover to ECS Landover will not occur. ECS will support the Dashboard COTS products identified in Table 4-4. Some of these products are the same products that are used with the Data Pool implementation discussed in the following sections. A single version will be used for both Dashboard and Data Pool. Planned Data Pool version is noted where the same COTS product is used by both Data Pool and Dashboard.

Table 4-4. Dashboard COTS Software at Phase 2

Product	Version for Solaris 2.5.1	Upgrade Planned for Solaris 8 Transition
PopChart Image Server/Image Builder	3.8	No
Apache Server	1.3.14	Yes
Jakarta Tomcat	3.2	Yes
jConnect for Solaris	5.2	No
mod_ssl	2.8.x	Yes
OpenSSL	0.9.x	Yes
PERL	5.6.0	Yes
JRE for Solaris	1.3	Yes
MM	1.1.x	Yes

Since no Dashboard turnover is currently planned, no activities or upgrade of these COTS products are planned prior to the Solaris 8 upgrade. At the Solaris 8 transition, Solaris 8-compatible versions of both Data Pool and Dashboard COTS products will be delivered for the xxmss20 hosts, as it is expected that the Data Pool Web Server, the Dashboard Application Server and the Dashboard Web Server will be hosted on xxmss20 prior to or during the Solaris 8 transition. Refer to Section 5.21, Dashboard COTS for Solaris 8 for additional information on this Solaris 8 activity. Refer to Section 4.13, Data Pool Web Server and Java COTS Products for additional information on Data Pool COTS delivery for Solaris 2.5.1 on xxmss20.

4.13 Data Pool Web Server and Java COTS Products

4.13.1 Description of COTS

A group of Web Server and Java COTS products will be delivered for Solaris 2.5.1 to support Data Pool. These products are identified in Table 4-5.

Table 4-5. Data Pool Web and Java COTS Products for Solaris 2.5.1

Product	Version	Targeted Host	JRE version
Apache	1.3.22	x0mss20	1.2.2
Tomcat	3.2.3	x0mss20	1.2.2
Velocity	1.1	x0mss20	1.2.2
JDOM	1.0beta7	x0mss20	1.2.2
JDOM	1.0beta7	x0dig06	1.3
Web Glis	3.2.1	x0mss20	1.2.2
JDBC API	2.0	x0mss20	1.2.2

4.13.2 Rationale for Upgrade

COTS products are need to support Data Pool custom code delivery.

4.13.2.1 Vendor Support

There are no vendor support issues. All products are freeware and the most recent version was selected for delivery.

4.13.2.2 NCRs

No NCRs are associated with these COTS/freeware products.

4.13.2.3 Features/Performance Upgrades

Products are new deliveries.

4.13.2.4 Cross Software Product Compatibility

The most recent versions have been identified to minimize upgrades. Dashboard uses Apache Server and Tomcat, at lower versions. Currently these products are not on x0mss20, so there is no impact expected with delivery. It is expected that Apache Server, Tomcat and the other Dashboard Web Server products will migrate to x0mss20 and utilize the x0mss20 Data Pool baselined versions of these products prior to or during the Solaris 8 Transition. One Dashboard product, mod_ssl, has dependencies on the Apache version used. As discussed in section 5, a version of mod_ssl that is compatible with the Apache 1.3.22 version will be delivered for Solaris 8.

4.13.2.5 Operating System Compatibility

Solaris 8 binaries are planned to be recompiled and delivered for Solaris. Solaris 2.5.1 versions may not be backward compatible.

4.13.2.6 Hardware Product Compatibility

There are no hardware product compatibilities with any of these products.

4.13.3 Operational Impact

No operational impacts have been identified beyond installation downtime and impacts identified in the PSR.

4.13.4 Custom Code Impact

Data Pool required these COTS products and Data Pool custom code has been tested with the delivered versions.

4.13.5 Security Impact

Although there is some potential security risk with Apache Web Server, the firewall, which will closely follow the Data Pool delivery, will make the potential security risks a non-issue.

4.13.6 Licensing Impact

All products in this delivery are freeware, therefore there are no licensing issues.

4.13.7 External Drivers

No external drivers beyond support for Data Pool have been identified.

4.13.8 Other Impacts/Comments

One COTS product, JDOM, has been identified as a beta product. A waiver has been approved for delivery of a beta version. The justification identified that there is a much lower level of risk with a beta freeware product, such as JDOM, than there would be with a beta version of a commercial product. With a commercial product, the vendor may no longer support the “beta” version. The process the JDOM group is following is the same as with “officially” released versions of freeware. Commercial product vendors offer bug fixes for supported versions. This practice is not followed with freeware, beta or official. A new version is offered and upgrade is necessary to mitigate risk for both the beta version and the “official” version.

4.13.9 COTS Installation Sequence/Dependencies

Products in this delivery should be installed with or prior to Data Pool custom code. CCR 01-0847 was submitted and approved to install JRE 1.2.1 on x0mss20 hosts and verify JRE 1.3 has been installed on x0dig06. These installations are required before installing the COTS identified in this section and the Data Pool custom code.

4.14 SGI TP9400 RAID Software Upgrade

4.14.1 Description of COTS

The SGI TP9400 RAID devices require new software for RAID management, the Total Performance Storage System Manager 7 (TPSSM7). It provides a graphical interface for configuring and monitoring the RAID hardware subsystem.

The storage management software is composed of the following 2 components, the client software and the host-agent package. These packages allow for the RAID to be managed either directly or across the network.

This is a system level COTS and like DG-RAID software is used only on systems where the TP9400 hardware is installed.

4.14.2 Rationale for Upgrade

The SGI Clariion RAID which used DG-RAID software met the end-of-life in December 2000. This RAID can no longer be purchased. The TP9400 RAID is the replacement RAID for the SGI Clariion RAID. The new TP9400 RAID requires new software to function.

4.14.2.1 Vendor Support

Vendor provides TPSSM7 software to support RAID management on the TP9400 RAID devices.

4.14.2.2 NCRs

There are no NCRs against this product.

4.14.2.3 Features/Performance Upgrades

TPSSM7 software will allow a TP9400 RAID on the network to be setup and monitored from one location. This could be from a SUN, SGI, or NT system. The software will also allow for re-configuration across the network.

4.14.2.4 Cross Software Product Compatibility

The TPSSM7 RAID software requires at least IRIX 6.5.9. The MODAPS host will be running IRIX 6.5.14. Three of the five targeted installations are currently at IRIX 6.5.9. The remaining host will require upgrade to IRIX 6.5.9. As PSR is available to support these upgrades. Java2 1.2.2 is bundled with the TPSSM7 RAID software and required for successful installation. The machines that are targeted for upgrade do not have current JAVA installations, so there should be no conflict.

4.14.2.5 Operating System Compatibility

There are no planned operating system upgrades that will impact operating system compatibility.

4.14.2.6 Hardware Product Compatibility

New RAID types for Origin 3000s and other SGIs require new software as this RAID cannot be supported under DG Fiber Channel or SCSI RAID drivers. Table 4-6 identifies the targeted hosts. Table 4-5 also identifies whether the RAID installation is an additional install to a host that already supports existing Fiber Channel or SCSI RAID or will be a new RAID installation for the host.

Table 4-6. TPSSM7 RAID Software Upgrade Targets

Host Name	Targeted OS Version	New/Additional
l0spg10	IRIX 6.5.9	New
g0spg10	IRIX 6.5.9	New
g0mog01	IRIX 6.5.14	Additional
p0tes01	IRIX 6.5.9	Additional
p0spg07	IRIX 6.5.9	Additional

4.14.3 Operational Impact

No operational impacts have been identified beyond installation downtime and impacts identified in the PSR.

4.14.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

4.14.5 Security Impact

No security impacts have been identified for this COTS product.

4.14.6 Licensing Impact

This product is licensed for SGI TP9400 RAID product. If the system has multiple RAID products from different vendors, an additional license is required..

4.14.7 External Drivers

No external drivers have been identified for this COTS product.

4.14.8 Other Impacts/Comments

Java2 1.2.2 is bundled with the TPSSM7 software. Installation instructions will include installation of Java2 1.2.2 as part of the overall install. Java will not be separately baselined because it is a bundled product.

4.14.9 COTS Installation Sequence/Dependencies

Upgrades to IRIX 6.5.9 or higher are required prior to TPSSM7 software installation.

4.15 IRIX 6.5.14 Patch Upgrade

4.15.1 Description of COTS

SGI provides operating system patch updates as minor operating system releases on a quarterly basis in order to provide patch baseline consistency for IRIX 6.5. The most current patch is 6.5.14.

4.15.2 Rationale for Upgrade

The rationale for upgrading ECS IRIX operating system baseline to IRIX 6.5.14 patch release includes the following:

1. Provides consolidation of all SGI boxes to same baseline patch version. Currently under baseline control, the x0spgxx hosts are at IRIX 6.5.9 and the x0acgxx, x0icgxx and x0drgxx hosts are at IRIX 6.5.6.
2. Provides SGI operating system patch versions to resolve bugs that affect ECS operation that are not available for current IRIX 6.5.6m and 6.5.9m baselines. Specifically on the older Challenge machines, the VME/VFE driver does not work.
3. Resolves an FTP bug that is fixed in IRIX patch releases greater than IRIX 6.5.12
4. Provides risk mitigation to address an incompatibility problem between IRIX 6.5.9 and IRIX 6.5.13 in algorithm processing where the same algorithm different OS versions result in different answers.
5. Upgrading to IRIX 6.5.14 will allow the Origin 3800s to take full advantage of their features and higher clock speeds.

Upgrades have been performed on the hosts identified in Table 4-7 at the DAACs to test this IRIX operating system patch upgrade version to resolve the VFE card issues. The tests were successful and will be considered as part of the planned upgrade process.

Table 4-7. IRIX 6.5.14 Upgrades Completed

HOST	DAAC
e0icg11	EDC
g0acg05	GSFC
g0icg02	GSFC
g0mog	GFSC
g0spg11	GSFC
l0acg02	LARC
l0icg02	LARC
n0icg01	NSIDC

At least some of the machines identified in Table 4-7 are running COTS products ClearCase and Legato Networker. There have been no identified operational issues with these COTS products although current versions are not certified for IRIX 6.5.14.

No hosts running AMASS 5.1.1 have been upgraded to IRIX 6.5.14 currently. The critical nature of this product and lack of certification of AMASS 5.1.1 for IRIX 6.5.14 has caused the IRIX 6.5.14 upgrade to be planned in two phases:

- Phase 1: Non-AMASS host upgrade
- Phase 2: AMASS host upgrade

The issues associated with AMASS software are discussed in detail under Cross Software Product Compatibility section below.

Additionally, upgrading to IRIX 6.5.14 will mitigate potential risks of not being able to incorporate the most current patches as they become available. Bug fixes are provided only by the vendor for the more recent “dot” patch releases, typically those released in the past year. The current IRIX “dot” releases, 6.5.6m and 6.5.9m, are well over a year old and would not be considered an acceptable “dot” release as a foundation for a new bug fix, should one be needed by ECS. Therefore a patch upgrade to 6.5.14m will provide an appropriate “dot” release for potential SGI bug fixes through end of contract.

4.15.2.1 Vendor Support

In IRIX patch version, 6.5.14, the following bug fixes are available and working:

- Support for VME/VFE cards
- FTP bug fix
- Algorithm consistency in compiler results.

Patch release 6.5.14 will be recent enough to support future bug fixes should they be needed by ECS.

4.15.2.2 NCRs

There are no NCRs against this product.

4.15.2.3 Features/Performance Upgrades

No additional features or performance enhancements are expected from this upgrade.

4.15.2.4 Cross Software Product Compatibility

While most COTS products, such as Sybase, are certified for IRIX 6.5.x, there are three COTS products that certify software versions at the patch or “dot” release version levels. These COTS products are Legato Networker, Rational ClearCase and AMASS. Testing has indicated that there is compatibility with Legato Networker and Rational ClearCase, although the vendor has not formally certified for IRIX 6.5.14. No AMASS machines have been upgraded because of vendor certification issues with IRIX 6.5.14.

Version 5.1.1 of AMASS is not certified for IRIX operating system patch releases beyond IRIX 6.5.11. In order to mitigate risk for this critical product, the vendor (ADIC) was contacted and asked to identify the AMASS version that would be certified for IRIX 6.5.14. ADIC responded that version 5.2.1 would be certified for IRIX 6.5.14 and was targeted for Generally Availability (GA) release on 3/10/2002. Current plans identify that upgrade of AMASS 5.2.1 will be tested as soon as available on IRIX 6.5.14. An update (revision) will be made to the Phase 1 IRIX 6.5.14 PSR to include the AMASS machines. This Phase 2 IRIX 6.5.14 PSR will be delivered with or slightly prior to delivery of the AMASS 5.2.1 PSR.

4.15.2.5 Operating System Compatibility

Patch upgrade to IRIX 6.5.14m will bring all SGIs to a single operating system version.

4.15.2.6 Hardware Product Compatibility

Upgrade to IRIX 6.5.14 will resolve an identified VME/VFE card hardware operational incompatibility.

4.15.3 Operational Impact

No operational impacts have been identified beyond installation downtime and impacts identified in the planned PSRs.

4.15.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

4.15.5 Security Impact

No security impacts have been identified for this COTS product.

4.15.6 Licensing Impact

There are no licensing issues with this upgrade.

4.15.7 External Drivers

No external drivers have been identified for this COTS product.

4.15.8 Other Impacts/Comments

No additional impacts are expected from this upgrade.

4.15.9 COTS Installation Sequence/Dependencies

There are no installation sequence or other dependencies to this upgrade.

5. Solaris 8-Related Upgrades

Some of the COTS products identified in the previous section had end of support issues and were planned for upgrade to a version that would mitigate end of support risks. Some of these COTS upgrades also supported Solaris 8 as well as Solaris 2.5.1. These “Pre-Solaris 8” upgrades are identified in Table 5-1. These upgrades are currently in progress and are discussed in detail in section 4 above. It is planned that these COTS products will be PSRed and installed prior to the Solaris 8 upgrade beginning. Those products that have a Solaris 8 version that has been delivered have a PSR delivery date identified.

Table 5-1. “Pre-Solaris 8” Upgrades Compatible with Solaris 8 Upgrade

COTS Product	Version	Solaris 2.5.1 Compatibility	Solaris 8 Compatibility	Solaris 8/Product patches required	Completion
ACSLs	6.0.1	No (early delivery on Solaris 8)	Yes	Review of possible patch deltas planned.	12/11/2001
Autosys	3.5	Yes	Yes	None Identified	07/24/2001
ClearCase	4.1	Yes	Yes	Being reviewed.	Est. 04/2002
Exabyte Driver	3.0	Yes	Compatibility Testing in progress	None Identified	TBD
Legato Networker	6.02	Yes	Yes	None Identified	08/14/2001
jConnect	5.2 for Solaris	Yes	Yes	None Identified	12/18/2001
NCDWare	5.1.140	Yes	Yes	None Identified	08/02/2001
Purify	5.3	Yes	Yes	None Identified	07/17/2001
StorEdge Volume Manager	3.04	Yes	Yes	Patches identified	07/17/2001
Sybase ASE/SQL Monitor	11.9.2	Yes	Yes	None Identified	10/25/2001
Sybase Replication Server/Monitor	11.5.1	Yes	Yes	None Identified	04/04/2000
Synergy SAN Software	SANergy 2.2.3/QFS 3.5.3.3	No (early delivery on Solaris 8)	Yes	Review of possible patch deltas planned.	12/14/2001
Tivoli Distributed Monitoring/Software Distribution	3.6.2	Yes	Yes	None Identified	Est. 02/2002

The products identified in Table 5-1 above are expected to transition to Solaris 8 without further upgrade. Some additional patches may be identified for these COTS products. None have been identified as of publication. If additional patches are needed at the time of upgrade for Solaris 8, these will be included in the Solaris 8 Transition Plan, Solaris OS Upgrade for Sun Based Machines on the ECS Project and/or Solaris 8 OS PSR.

Some COTS products have been removed or planned for replacement with the Solaris 8 Transition. Additional detail regarding planned software removals/replacements are provided in Section 6, COTS Software Removals in this document.

Some COTS products that had been previously separately baselined in the Solaris 2.5.1 operating system release will be bundled and delivered with the standard operating system release and will no longer be separately identified and versioned on the COTS Software Version Baseline (910-TDA-003). These products will be managed with Solaris 8 Operating System, Solaris 8 Operating System patches and other upgrades, not as individual freeware or COTS products. These products are identified in Table 5-2.

Table 5-2. COTS Products Bundled with the OS

COTS Product	Version	Comment
Disksuite	4.2.1	Freeware product bundled with standard Solaris 8 Install. Will not longer be separately baselined.
GNU Zip/Unzip	1.2.4	Freeware product bundled with standard Solaris 8 Install. Will not longer be separately baselined.
NTP	Solaris 8 bundled version	Freeware product bundled with standard Solaris 8 Install. Will not longer be separately baselined.
Traceroute	1.1.7	Freeware product bundled with standard Solaris 8 Install. Will not longer be separately baselined.

Table 5-3 provides a list of Solaris 8 upgrades that require Solaris 8 to be installed prior to the COTS product version upgrade.

Table 5-3. Summary of Solaris 8 Dependent COTS Upgrades (1 of 2)

COTS Products	Targeted Solaris 8 Version	PSR Delivery/Bundle	Scheduled Delivery
Acrobat Reader	4.05	Automounted PSR Bundle	04/2002
ACSLs	6.0.1	ACSLs PSR	12/11/2001
Anlpassword Replacement	TBD ³	Anlpassword Replacement	04/2002
Crack	5.0	Crack PSR	04/2002
Data Pool/Dashboard Java & Web Services COTS	Apache 1.3.22 Tomcat 3.2.3 mod_ssl 2.8.5 Open_ssl 0.9.6c MM 1.1.3 Velocity 1.2 JDOM 1.0beta7 JDBC API 2.0 Web Glis 3.2.1	Web & Java Services PSR Bundle	04/2002
Exabyte Driver or Replacement	1.3	None if Exabyte retained	04/2002
FIND_DDOS	4.2	Automounted PSR Bundle	04/2002
FLEXIm	8.0d	FLEXIm PSR	04/2002
Forcheck	12.84	Forcheck PSR	04/2002
Forte Developer (formerly Visual Workshop & SPARC FORTRAN compilers))	6.1 or 6 Update 1	Solaris Compiler PSR	04/2002
Ghostview	1.5 ⁴	Automounted PSR Bundle	04/2002
IDL for Sun/SGI/PC	5.5	IDL PSR	04/2002
iPlanet Web Server (formerly Netscape Enterprise Server)	6.0	iPlanet Web Server PSR	04/2002
Java Runtime Environment (JRE) for Solaris/SGI	1.3.1_01 for Sun/1.3.1 for SGI	JRE PSR	04/2002
JetDirect	E.10.18	Solaris 8 OS PSR	04/2002
Netscape Communicator	4.78	Automounted PSR Bundle	04/2002
PERL	5.6.1	Automounted PSR Bundle	04/2002
Remedy ARS 4.5.2 Solaris Server/4.5.1 Solaris User Tool/4.5.2 NT User Tool/4.5.2 NT Admin Tool	4.5.2	Remedy ARS PSR	04/2002

³ Tivoli's SecureWay and CA's eTrust are being evaluated for replacement.

⁴ Same as current version.

Table 5-3. Summary of Solaris 8 Dependent COTS Upgrades (2 of 2)

COTS Products	Targeted Solaris 8 Version	PSR Delivery/Bundle	Scheduled Delivery
SGI Compilers ProDev Workshop	7.3.1.2 2.8.1	SGI Compiler Upgrade PSR	04/2002
Secure Shell/TCPWrappers	Secure Shell 1.3.11 & 2.4/ TCPWrappers 7.6	Solaris 8 OS PSR	04/2002
Sendmail	1.2.2	Sendmail Commercial PSR	04/2002
Solaris (including DiskSuite, Gnu Zip/unzip, NTP, Traceroute, bind and Top as bundled products)	8 Update 07/01	Solaris 8 OS PSR	04/2002
Sybase Open Client for Solaris	12.0	Automounted PSR Bundle	04/2002
TCL/tk	8.3.3	Automounted PSR Bundle	04/2002
Tripwire	1.3.1	Solaris 8 OS PSR	04/2002

A more detailed discussion of each Solaris 8 dependent COTS is provided in the following sections on a per product basis.

5.1 Solaris 8 Operating System Upgrade

5.1.1 Description of COTS

Solaris is the operating system required to support Sun hardware devices.

5.1.2 Rationale for Upgrade

End of support for Solaris 2.5.1 with several third party COTS products is this upgrade's primary driver. The most recent versions of several COTS products, including Sybase ASE & Replication Server, Netscape Enterprise Server, ClearCase, Legato Networker and Remedy, are not available for Solaris 2.5.1. With the Sun vendor announcing end of life for Solaris 2.5.1, third party vendors are not including Solaris 2.5.1 as a supported version. Sun is also dropping support for Solaris 2.5.1 for products such as compilers and RAID volume managers. Upgrade is to mitigate risks of support terminating for critical ECS COTS products. Risk would be expected to increase over time without upgrade.

5.1.2.1 Vendor Support

Vendor announced end of life for Solaris 2.5.1 on 3/2000. Although support continues, it is at a maintenance level, which may include recommendation to upgrade the Operating System version in order to resolve the issue, as bug fixes are no longer included after end of life. Decreasing patch support is also expected. Dropping of support for Solaris 2.5.1 in the most recent third-party COTS product versions is the primary driver.

5.1.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.1.2.3 Features/Performance Upgrades

The Solaris 8 Operating System will provide the following features:

- The Solaris 8 operating environment supports the Universal Disk Format (UDF) file system, enabling users to exchange data stored on CD-ROMs, disks, diskettes, DVDs, and other optical media.
- The Solaris Common Desktop Environment (CDE) contains new and enhanced features that incorporate easy to use desktop productivity tools, PC interoperability, and desktop management tools.
- The X Server is upgraded to the X11R6.4 industry standard.
- 64-bit Operating System
- LDAP (Lightweight Directory Access Protocol) Support
- Dynamic reconfiguration

5.1.2.4 Cross Software Product Compatibility

Solaris 8 compatibility with other COTS product versions are addressed with each COTS product included in this document.

5.1.2.5 Operating System Compatibility

Backward and forward Solaris Operating System compatibility is discussed on a per product basis in this document.

5.1.2.6 Hardware Product Compatibility

Solaris 8 is supported by all current ECS Sun machines. However, disk and/or memory upgrades may be needed in some cases. Upgrades may be more long term cost-effective in other cases. Solaris 8 hardware compatibility is discussed in Section 8.4 Solaris 8 Hardware Upgrades.

5.1.3 Operational Impact

Substantial operational impact is expected. Transition approaches are being developed to mitigate this impact. The Solaris 8 Transition Plan and Solaris OS Upgrade for Sun Based Machines on the ECS Project will address these issues in detail.

5.1.4 Custom Code Impact

There are significant custom code impacts to a Solaris 8 upgrade, including IRIX custom code as well as Solaris custom code. The Solaris 8 Release Manager and Development organization with assistance from RTSC have installed Solaris 8 and all development COTS products and are working on completing Solaris 8 and IRIX 6.5.x System Builds. Stress testing early and often is a major goal to mitigate custom code impact as much as possible. Table 5-4 provides the development COTS products that have been installed in the EDF to facilitate this effort.

Table 5-4. Development COTS Products

Development COTS Product	Current Baseline Version	Targeted Baseline Version
Boulder Software (XVT) DSC	4.6	5.1
Builders Xcessory/Epak	5.0.3 (BX) 3.0 (Epak/GraphPak)	5.0.8 (BX) 3.04 (Epak/GraphPak)
ClearCase in the EDF	3.2.1	4.1
HDF	4.1r3 Solaris 2.5.1 binary	4.1r5 & 5-1.4.1
JAVA SDK for Solaris	1.2.1	1.3.1_01
JAVA SDK for IRIX	1.2.2/1.3	1.3.1
Rogue Wave Libraries: DBTools Tools ToolsPro	DBTools 3.1.4 Tools 7.0b ToolsPro 1.1.1	DBTools 4.2.2 Tools 8.5.0 ToolsPro 2.5.0
SGI MIPSpro Compilers/ProDev Workshop for RogueWave Upgrades *	7.2.1.3m/2.7	7.3.1.2/2.8.1
TCL/TK	8.0 patch 4	8.3.3
Visual Workshop for C++/FORTRAN 77 & FORTRAN 90 Compilers	3.0/4.2	Forte 6.1: C, C++ and HPC suites

5.1.5 Security Impact

No security impacts have been identified for this COTS product. A review of all software delivered with the 0701 CD was conducted. The Security Group identified that there were no issues with any of the planned Solaris 8 baseline delivery. Additional patches, including security patches continue to be tracked and will be added for final Solaris 8 delivery if recommended by the Security Group.

5.1.6 Licensing Impact

There are no licensing issues with this software. No license keys are required.

5.1.7 External Drivers

External Drivers are being identified and worked in the Solaris 8 Transition Plan and Solaris OS Upgrade for Sun Based Machines on the ECS Project.

5.1.8 Other Impacts/Comments

Other impacts are being identified and worked in the Solaris 8 Transition Plan and Solaris OS Upgrade for Sun Based Machines on the ECS Project.

5.1.9 COTS Installation Sequence/Dependencies

Installation sequence and dependencies are being identified and worked in the Solaris 8 Transition Plan and Solaris OS Upgrade for Sun Based Machines on the ECS Project.

5.2 FIND_DDOS 4.2

5.2.1 Description of COTS

The Distributed Denial of Service Detection Tool (FIND_DDOS) for SUN/Solaris will detect several known denial of service trojans by looking at all 32-bit ELF format files in a given directory tree. The tool compares the file strings and symbol table against a set of known “fingerprints” for denial of service tools. If a file is found to be a close match to one of these fingerprints, it is identified with the file the fingerprint represents. If it finds a match in a running process, it will also grab a core image of the process for subsequent analysis. Any files that are found to match are also examined for any embedded IP addresses. All results are either displayed to the user’s terminal and/or stored in a log file. The FIND_DDOS tool also looks for files named “...” or “mserver”, and optionally makes a copy of them for later analysis. These are common names for files that contain a list of blowfish encrypted IP addresses.

5.2.2 Rationale for Upgrade

Product will be upgraded for compatibility with Solaris 8 and to include new features and capabilities provided with a more recent version.

5.2.2.1 Vendor Support

Upgrade is needed for binary compatibility and to include the most current features.

5.2.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.2.2.3 Features/Performance Upgrades

Some additional or enhanced security features are expected from this upgrade.

5.2.2.4 Cross Software Product Compatibility

There are no software dependencies or compatibility issues associated with this product.

5.2.2.5 Operating System Compatibility

Upgrade version binary obtained for Solaris 8 support has not been identified as supporting Solaris 2.5.1 and therefore may not be backward compatible with Solaris 2.5.1.

5.2.2.6 Hardware Product Compatibility

There are no known hardware compatibility issues associated with this product.

5.2.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.2.4 Custom Code Impact

There are no custom code impacts associated with this COTS product.

5.2.5 Security Impact

No security impacts have been identified for this COTS product.

5.2.6 Licensing Impact

There are no licensing issues with this software, as the product is

5.2.7 External Drivers

No external drivers have been identified for this COTS product.

5.2.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.2.9 COTS Installation Sequence/Dependencies

The Solaris 8 Operating System upgrade is required to be installed before upgrading the COTS product. COTS product is planned to be automounted and delivered with the Automounted COTS PSR Bundle.

5.3 FLEXlm 8.0d

5.3.1 Description of COTS

FLEXlm is a commercially available network license management product used for administering licenses and enforcing licensing provisions for FLEXlm-enabled COTS software. FLEXlm:

- controls use of installed licenses for vendor software having embedded FLEXlm licensing technology
- supports use of floating (concurrent) licenses, node locked licenses (both “counted” and “uncounted”), or any combination of the above
- maintains a log of licensing events
- produces reports about the status of network licensing activities

5.3.2 Rationale for Upgrade

The Solaris 8 compilers require an upgrade to at least FLEXlm 7.0e. Since an upgrade is required, FLEXlm will be upgraded to the most current version available, 8.0d to assure no additional upgrades needed will be needed to support other COTS products that utilize FLEXlm for license management.

5.3.2.1 Vendor Support

FLEXlm is supported over a broad range of operating systems. The upgrade driver is the feature set of specific FLEXlm versions that third party products use for license management. The Sun compilers needed for Solaris 8 require an upgrade from the current FLEXlm 6.1 version.

5.3.2.2 NCRs

No NCRs are identified in association with this COTS product at the currently baselined version.

5.3.2.3 Features/Performance Upgrades

No additional features or performance upgrades are expected from this upgrade.

5.3.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.3.2.5 Operating System Compatibility

Globetrotter provides 8.0d version binaries for Solaris 8 and for Solaris 2.5.1. The version is backward compatible, but the binaries may not be backward compatible. Reinstallation of the correct binaries may be necessary for backward compatibility at the same version.

Upgrade is also planned for IRIX 6.5. Version is compatible with all 6.5 releases.

5.3.2.6 Hardware Product Compatibility

There are no known hardware compatibility issues associated with this product.

5.3.3 Operational Impact

Upgrade should have no operational impact if the baseline redundant server implementation is installed. Refer to 920-TDx-003 (Infrastructure Documents) for a listing of the current baselined Sun FLEXlm License Servers. In the redundant server implementation, FLEXlm is required to

be installed on three Solaris servers and a special key, naming all three server machines, is utilized as the redundant server license key. This installation and special license key enables the license server failover to occur when one license server is fails or is brought down. The PSR installation and the Transition Plan assume that the baselined FLEXIm redundant license servers have been implemented. The Solaris Transition will make every effort to minimize operational impact, by not having more than one Solaris license server down at any point in time.

5.3.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

5.3.5 Security Impact

No security impacts have been identified for this COTS product.

5.3.6 Licensing Impact

There are no licensing issues with this software, except that special license keys naming all three Solaris FLEXIm redundant servers are required for the baseline redundant server implementation. Contact Jan Fisher (jfisher@eos.hitc.com) 301 925-0718 or Robin Castle (rcastle@eos.hitc.com) 301 925-0726 to obtain redundant server license keys. Contact CUT Group – Maryellen Corbett (mcorbett@eos.hitc.com) 301 925-0703 to change license servers from those identified in CM document 920-TDx-003. Table 5-5 identifies the current license servers baselined for each DAAC. If one or more of these servers is changed or replaced, a new license key will be required.

Table 5-5. FLEXIm Redundant Servers

Site	Baselined Solaris License Servers	Baselined SGI License Servers
EDC	e0mss01; e0mss04; e0css02	e0aag02; e0spg05; e0wkg01
GSFC	g0mss07; g0mss10; g0css02	g0drg01; g0drg02; g0spg01
LARC	l0mss05; l0mss10; l0css02	l0drg01; l0spg10; l0spg01
NSIDC	n0mss05; n0mss01; n0css02	n0aag02; n0drg01; n0spg03

5.3.7 External Drivers

No external drivers have been identified for this COTS product.

5.3.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.3.9 COTS Installation Sequence/Dependencies

The Solaris 8 operating system upgrade is to be installed before upgrading the COTS product to this version.

5.4 Forte Developer 6.1

5.4.1 Description of COTS

Forte Developer software provides a tightly integrated programming environment designed to speed software development. Forte Developer contains a full set of graphical tools that provides the ability to create and maintain custom code applications for the Solaris 8 Operating System Environment simplifying the tasks you perform most often: compiling, building, browsing, editing, debugging, and tuning.

Forte Developer includes the following individual products

- Forte C++, (formerly Sun Visual WorkShop[tm] C++), which also includes:
 - C Compiler
 - C ++ Compiler
 - Memory Monitor/Garbage Collector
 - Debugger
 - Integrated Development Environment
 - Visual GUI Builder
 - Performance Tuning Tools
- Forte for HPC (High Performance Computing) and Forte Fortran, (formerly Sun Performance WorkShop[tm] Fortran), which also includes:
 - FORTRAN77
 - FORTRAN95 (which supports FORTRAN90)
 - C Compiler
 - C ++ Compiler
 - Memory Monitor/Garbage Collector
 - Debugger
 - Integrated Development Environment
 - Visual GUI Builder
 - Performance Tuning Tools
- Forte C, (formerly Sun WorkShop Professional[tm] C)
 - C Compiler
 - Debugger

- Integrated Development Environment
- Performance Tuning Tools

5.4.2 Rationale for Upgrade

Solaris compiler upgrades are required for Solaris 8 compatibility and development of custom code on Solaris 8.

5.4.2.1 Vendor Support

Current compiler versions are not supported on Solaris 8. In addition, current compiler versions are at end of life and therefore require an upgrade for full support.

5.4.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.4.2.3 Features/Performance Upgrades

No additional features or performance upgrades are expected from this upgrade.

5.4.2.4 Cross Software Product Compatibility

Purify 5.3, BX 5.08 and Rogue Wave Libraries support Forte 6.x compiler versions.

5.4.2.5 Operating System Compatibility

Forte compilers version 6.1 are compatible with Solaris 8, but are not backward compatible with Solaris 2.5.1.

5.4.2.6 Hardware Product Compatibility

There are no known hardware compatibility issues associated with this product.

5.4.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.4.4 Custom Code Impact

Solaris 8 requires upgrade to Forte 6 compilers. Version 6.1 will provide compatibility with Rogue Wave and other COTS products. This will require recompile of all Sun custom code. Builds are currently being completed for all subsystems.

5.4.5 Security Impact

No security impacts have been identified for this COTS product.

5.4.6 Licensing Impact

License keys are required for specific functionality to be available. PSR will address licensing steps.

5.4.7 External Drivers

No external drivers have been identified for this COTS product.

5.4.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.4.9 COTS Installation Sequence/Dependencies

The Solaris 8 Operating System upgrade is required to be installed before upgrading the COTS product. COTS product is not compatible with Solaris 2.5.1.

5.5 SGI MIPSpro Compilers/ProDev Workshop

5.5.1 Description of COTS

The IRIX MIPSpro Compilers for C, C++ , FORTRAN77, FORTRAN90 and ProDev WorkShop upgrades will be included in the PSR.

SGI's ProDev WorkShop provides an integrated set of powerful and highly visual tools for creating, debugging and tuning software and includes the following components:

- Visual Debugger
- Graphical Code Analyzer
- Powerful Performance Analyzer
- Integrated Build Manager

ProDev WorkShop covers all phases of software development – from initial coding through debugging and performance tuning – with powerful graphics to speed development. Languages supported include C, C++, Fortran, and Ada,

5.5.2 Rationale for Upgrade

Because of the upgrade of RogueWave Tools identified in Table 5-4, an upgrade of SGI MIPSpro Compilers are also required to meet vendor version certification requirements. The RogueWave versions require MIPSpro C++ compiler 7.3.1.x for compatibility. All MIPSpro compilers will be upgraded to version 7.3.1.2. Upgrade of ProDev to version 2.8.1 will also be bundled with the MIPSpro compiler upgrades.

Product will be upgraded for compatibility with Solaris 8/IRIX 6.5 versions of RogueWave libraries used to support Solaris 8 custom code.

5.5.2.1 Vendor Support

Upgrade is needed for compatibility and support for RogueWave libraries used with Solaris 8 custom code delivery.

5.5.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.5.2.3 Features/Performance Upgrades

Some FORTRAN90 bug fixes for the compilers are included in this overlay. Many bugs in ProDev Workshop were also fixed including array browser losing state and X/Motif view of IRIX 6.5 library.

In ProDev Workshop, pthread debugging is much improved earlier releases. Developers can now single step an individual pthread without moving the others, and focusing problems have been resolved as well. There are several new enhancements to Workshop. There is an added option for data display automatic fit. Symbol table processing time is much faster now with regards to Fortran common blocks.

5.5.2.4 Cross Software Product Compatibility

Compilers are compatible and certified with planned Solaris 8 RogueWave library versions and Purify.

5.5.2.5 Operating System Compatibility

Compilers and ProDev Workshop versions are supported on all 6.5.x versions.

5.5.2.6 Hardware Product Compatibility

There are no known hardware compatibility issues associated with this product.

5.5.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.5.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

5.5.5 Security Impact

No security impacts have been identified for this COTS product.

5.5.6 Licensing Impact

There are no licensing issues with this software. License keys will be addressed in SGI Compiler Upgrade PSR.

5.5.7 External Drivers

No external drivers have been identified for this COTS product.

5.5.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.5.9 COTS Installation Sequence/Dependencies

There are no installation or COTS product dependencies.

5.6 JRE for Solaris (1.3.1_01)/SGI (1.3.1)

5.6.1 Description of COTS

The Java Runtime Environment (also known as the Java Runtime Environment or JRE) consists of the Java virtual machine, the Java platform core classes, and supporting files. It is the runtime part of the Java Development Kit – no compiler, no debugger, and no tools. The JRE is the smallest set of executables and files that constitute the standard Java platform.

5.6.2 Rationale for Upgrade

Java DAR tool requires features in the 1.3.1.x Java SDK. In addition, the current version (1.2.1) is not currently supported by Sun. Sun Security Bulletin #208 also recommended upgrade to version 1.3.1 or later to mitigate risk for security vulnerabilities. Sun Security Bulletin #208 stated that “this vulnerability was fixed in the Java 2 SDK, Standard Edition, v 1.3.1”. JRE for the IRIX Operating System will also be upgraded 1.3.1 to mitigate security risks and mitigate end of contract support risks.

5.6.2.1 Vendor Support

Current baseline version of JRE for Solaris is unsupported for Solaris. Upgrade is needed for a supported version and to mitigate security risks for both Solaris and IRIX implementations.

5.6.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.6.2.3 Features/Performance Upgrades

The following are new features provided since 1.2 with the Java SDK and supported on JRE 1.3.x:

- Java Naming and Directory Interface™ (JNDI)
- Remote Method Invocation (RMI)
- RMI/IIOP
- CORBA ORB

- Java IDL compiler, idlj
- Drag and Drop Enhancements
- Java Sound
- Applet Deployment Enhancements
- Java 2D™ Enhancements
- Swing Enhancements
- AWT Enhancements
- Security Enhancements
- Networking Enhancements
- Reflection Enhancements
- Object Serialization Enhancements
- Accessibility Enhancements
- Input Method Framework
- Collections Framework Enhancements
- Enhancements to java.math
- Enhancements in java.lang and java.util.*
- Enhancements to the Extension Mechanism and Jar Files
- Support for Motif 2.1

5.6.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues. A JRE 1.3.1_01 plug-in will be included in the Netscape Communicator installation for compatibility with the Solaris JRE version.

5.6.2.5 Operating System Compatibility

JRE 1.3.1_01 is not officially supported on Solaris 2.5.1, so backward compatibility with the Solaris 2.5.1 Operating System cannot be reliably assumed. JRE 1.3.1 for IRIX is compatible with all 6.5.x releases.

5.6.2.6 Hardware Product Compatibility

There are no identified hardware impacts associated with this product.

5.6.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.6.4 Custom Code Impact

Features needed for Solaris 8 version of Java DAR Tool are provided with version 1.3.1. Data Pool and Dashboard custom code also requires JRE. Solaris 8 testing will test Data Pool and Java DAR tool custom code. Dashboard is currently using JRE 1.3, so minor impact to Dashboard DUE custom code is expected. IRIX testing will include BMGT and PDS custom code, which utilizes JRE.

5.6.5 Licensing Impact

There are no licensing issues with delivery of JRE to the DAACs. It is freeware provided by SunSoft.

5.6.6 Security Impact

This JRE version includes security fixes and updates from previous versions, including addressing Sun Security Alert #00208.

5.6.7 External Drivers

No external drivers have been identified for this COTS product.

5.6.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.6.9 COTS Installation Sequence/Dependencies

The Solaris 8 Operating System upgrade is required to be installed before upgrading the COTS product because of possible custom code compatibility issues if installed before Solaris 8 Transition.

5.7 Secure Shell/TCPWrappers

5.7.1 Description of COTS

Secure Shell is a secure, drop in replacement for the inherently insecure Berkeley R-commands such as rlogin, rsh, and rcp. TCP Wrappers provides a secure mechanism to allow or deny access from particular networks or hosts via particular protocols. For example, secure shell might be allowed as a protocol from a particular Internet Service Provider but telnet would be denied. The server installations will be installed on both DAAC operational hosts and M&O hosts.

5.7.2 Rationale for Upgrade

Solaris 8 compatibility is the only upgrade driver. No upgrades are available for either Secure Shell or TCPWrappers. TCPWrappers version 7.6 and Secure Shell Commercial version and 2.4 will continue to be used for Solaris 8. Secure Shell 1.3.7 will be upgraded to version 1.3.11.

5.7.2.1 Vendor Support

There are no more current upgrades available for these COTS products. Source code for both products will be recompiled for Solaris 8 compatibility.

5.7.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.7.2.3 Features/Performance Upgrades

No additional features or performance upgrades are expected from this upgrade.

5.7.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.7.2.5 Operating System Compatibility

Product has been compiled and tested only for compatibility with Solaris 8, and therefore may not be backward compatible. Delivery is intended for Solaris 8 only.

5.7.2.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product.

5.7.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.7.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

5.7.5 Security Impact

No security impacts have been identified for this COTS product.

5.7.6 Licensing Impact

TCP/Wrappers is a freeware product and has no license issues or license keys. Secure Shell commercial does not require license keys.

5.7.7 External Drivers

No external drivers have been identified for this COTS product.

5.7.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.7.9 COTS Installation Sequence/Dependencies

The Solaris 8 Operating System upgrade is required to be installed before upgrading the COTS product.

5.8 JetDirect E.10.18

5.8.1 Description of COTS

JetDirect provides printer installation services in a networked environment. JetDirect will be the replacement product for JetAdmin.

5.8.2 Rationale for Upgrade

Product end of life/end of support are principal drivers for upgrade. Solaris 8 is also not supported by current product/versions of Jet Admin.

5.8.2.1 Vendor Support

HP has announced that support for the JetAdmin freeware product will end 01/31/2002. The vendor recommends migration to WebJetAdmin. Evaluation by RTSC has identified that this product is not a suitable product for replacement. Speed was a primary consideration in the evaluation. HP JetDirect services are targeted as the JetAdmin replacement product, but the bundled Solaris 8 print services are also to be reviewed for replacement.

5.8.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.8.2.3 Features/Performance Upgrades

No additional features or performance upgrades are expected from this upgrade.

5.8.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.8.2.5 Operating System Compatibility

Version is not certified for Solaris 2.5.1 and may not be backward compatible. Intended for Solaris 8 only.

5.8.2.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product.

5.8.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.8.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

5.8.5 Security Impact

No security impacts have been identified for this COTS product.

5.8.6 Licensing Impact

There are no licensing issues with this software.

5.8.7 External Drivers

No external drivers have been identified for this COTS product.

5.8.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.8.9 COTS Installation Sequence/Dependencies

The Solaris 8 Operating System upgrade should be completed prior to this COTS being installed.

5.9 Netscape Communicator 4.78

5.9.1 Description of COTS

Netscape Communicator provides the following capabilities:

- “browse” HTML pages on the Internet
- read and send electronic mail
- read and contribute to Internet news groups (bulletin board services).
- interface into ECS System

5.9.2 Rationale for Upgrade

Solaris 8 compatibility and security issues are the primary drivers for upgrade.

5.9.2.1 Vendor Support

At the time work began on upgrade, version 6.0 had been released, this version reported to be somewhat unstable. Version 6.1 is at a “Preview” or beta edition. Vendor identified version 4.78 as the most stable version with all known security issues addressed.

5.9.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.9.2.3 Features/Performance Upgrades

No additional features or performance upgrades are expected from this upgrade.

5.9.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.9.2.5 Operating System Compatibility

Version is compatible with Solaris 2.5.1 and Solaris 8, but will be delivered as an automounted application for access by Solaris 8 only.

5.9.2.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product.

5.9.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.9.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

5.9.5 Security Impact

No security impacts have been identified for this COTS product.

5.9.6 Licensing Impact

There are no licensing issues with this software.

5.9.7 External Drivers

No external drivers have been identified for this COTS product.

5.9.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.9.9 COTS Installation Sequence/Dependencies

The Solaris 8 Operating System upgrade is required to be installed before upgrading the COTS product.

5.10 iPlanet Web Server, Enterprise Edition 6.0

5.10.1 Description of COTS

Netscape Enterprise Server has been acquired by iPlanet and renamed iPlanet Web Server, Enterprise Edition.

iPlanet Web Server provides the capability to access documents and services using the HTTP protocol. This includes static HTML documents as well as the capability to execute programs either with Java or Common Gateway Interface (CGI). Upgrade version provides enhanced support for java and java features.

5.10.2 Rationale for Upgrade

End of support for current baseline version is primary upgrade driver.

5.10.2.1 Vendor Support

Vendor has identified that the 3.6.x series has reached end of support. Upgrade to supported more current version requires a more recent Solaris Operating System version than Solaris 2.5.1. Higher levels of JAVA support are provided by the most recent version. Version 6.0 was released at the end of June 2001 and will be the targeted upgrade version.

5.10.2.2 NCRs

NCR ECSed25270 has been entered against a feature not supported in Netscape Enterprise Server 3.6. Upgrade was not on option without a Solaris operating system upgrade. Upgrade to version 6.0 is planned with the Solaris 8 operating system upgrade and problem is expected to be resolved.

5.10.2.3 Features/Performance Upgrades

Version 6.0 of iPlanet Web Server, Enterprise Edition, includes the following features:

- Enhanced Virtual Server Support
- J2EE Web Container Support, including:
 - Full JSP 1.1 and Servlet 2.2 compliance
 - WAR file deployment
 - Standard and custom tag libraries
 - JSP pre-compilation
 - Session-aware load balancing and failover
- Improved User Interface
- Command Line Administration Tools
- Support for Session-Aware Load Balancing and Failover

- New Dynamic Reconfiguration
- server.xml
- Performance Enhancements in the following areas:
 - Keep-alive handling — now thousands of keep-alive connections can be maintained.
 - File caching — for improved performance and scalability.
- Security Enhancements
- Templated Installation for Multiple Machines

5.10.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.10.2.5 Operating System Compatibility

Version is not supported on Solaris 2.5.1 and therefore may not be backward compatible with Solaris 2.5.1. Intended only for Solaris 8.

5.10.2.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product.

5.10.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.10.4 Custom Code Impact

Several subsystems currently use iPlanet Web Server (currently Netscape Enterprise Server) Adequate tests will be conducted to ensure compatibility with ECS custom code associated with this upgrade.

5.10.5 Security Impact

No security impacts have been identified for this COTS product.

5.10.6 Licensing Impact

There are no licensing issues with this software. License keys are required.

5.10.7 External Drivers

No external drivers have been identified for this COTS product.

5.10.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.10.9 COTS Installation Sequence/Dependencies

The Solaris 8 Operating System upgrade is required to be installed before upgrading the COTS product.

5.11 PERL 5.6.1

5.11.1 Description of COTS

Perl is a language optimized for scanning arbitrary text files, extracting information from those text files, and printing reports based on that information. There are a number of Perl scripts used throughout the ECS code. In addition, the following Perl modules provide additional capabilities that are required by some of the scripts:

- DBD-Sybase-0.91.tar.gz
- DBI-1.19.tar.gz
- GD-1.33.tar.gz
- MIME-Base64-2.11.tar
- PNGgraph-1.11.tar.gz
- SendMail-2.00.tar
- TclTk-b2.tar.gz
- gd-1.8.4.tar.gz
- jpegsrc.v6b.tar.gz – Added because the gd or GD module needs this as a prerequisite module.
- libpng-1.0.12.tar.gz
- zlib-1.1.3.tar.gz

5.11.2 Rationale for Upgrade

Several more recent versions have been released since last upgrade. Solaris recompile requires PSR steps and upgrade will mitigate potential compatibility risks. PERL upgrade will be delivered for Solaris 8 and IRIX 6.5.x.

5.11.2.1 Vendor Support

The PERL freeware product continues to evolve rapidly. Upgrade to more current version is planned. Version 5.6.1 is the recent version available.

5.11.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.11.2.3 Features/Performance Upgrades

No additional features or performance upgrades are expected from this upgrade.

5.11.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.11.2.5 Operating System Compatibility

Version has been compiled and tested for Solaris 8 and IRIX 6.5.x only, and will be automounted for Solaris 8 access only. The Solaris 2.5.1 automounted version will still be available for roll-back. Automounted 2.5.1 versions will not be removed until the Solaris 8 Transition is completed.

5.11.2.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product.

5.11.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.11.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

5.11.5 Security Impact

No security impacts have been identified for this COTS product.

5.11.6 Licensing Impact

There are no licensing issues with this software.

5.11.7 External Drivers

No external drivers have been identified for this COTS product.

5.11.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.11.9 COTS Installation Sequence/Dependencies

The Solaris 8 Operating System upgrade is required to be installed before upgrading the COTS product.

5.12 Remedy ARS 4.5.2

5.12.1 Description of COTS

The Remedy Action Request System (ARS) is a trouble ticket management COTS application which:

- provides the capability to electronically compose, submit, store, maintain, and report the status of ECS trouble tickets
- allows operations personnel to forward trouble tickets from one ECS site to another;
- allows operations personnel to forward a copy of a closed trouble ticket to the SMC for trending analysis purposes;
- generates reports and statistics;
- interfaces with user's and operator's e-mail to provide automatic notification.

5.12.2 Rationale for Upgrade

End of support and Solaris 8 compatibility are the primary upgrade drivers.

5.12.2.1 Vendor Support

Version 5.0 is expected after the first of the year. Release of this version will bring current version 3.2.1 to end of support. Version 4.5.2, which is currently available, is targeted as the Solaris 8 upgrade version.

5.12.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.12.2.3 Features/Performance Upgrades

Features have been added to enhance Remedy maintenance and development capabilities, including:

- New maintenance features include:
 - object search and modify capability,
 - table aggregate functions
 - external authentication capability.
- Development enhancements include a richer set of development tools, including:
 - Re-usable workflow
 - Workflow packaging
 - Object query and bulk update.
- Performance enhancements are expected for including:
 - a more efficient dispatcher, using fewer network packets
 - smart caching of commonly accessed fields
 - increases in the potential number of threads.

5.12.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues. Remedy ARS has dependencies on Sybase ASE versions. This version supports Sybase 11.9.2, 12.0 and 12.5. Support for 12.5 has been confirmed with the vendor, although some published compatibility matrices on their Web site has not published support for this version.

5.12.2.5 Operating System Compatibility

Version 4.5.2 requires a Solaris Operating System version higher than 2.5.1, and is therefore not backward compatible.

5.12.2.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product. However, a hardware configuration change is required for Remedy ARS 4.5.2. Starting with version 4 of Remedy. The Admin tool is Windows (NT recommended) based. The PDS QA Server, an NT host, is currently the target for the Remedy Admin tool. Systems Engineering is in discussion with the DAACs on finalizing this configuration.

5.12.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.12.4 Custom Code Impact

EcMsTtMSSSRVR custom code is expected to be impacted by this upgrade.

5.12.5 Security Impact

No security impacts have been identified for this COTS product.

5.12.6 Licensing Impact

There are no licensing issues with this software but it may only be installed on the appropriate hardware.

5.12.7 External Drivers

No external drivers have been identified for this COTS product.

5.12.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.12.9 COTS Installation Sequence/Dependencies

The Solaris 8 operating system upgrade is required to be installed before upgrading the COTS product.

5.13 Sendmail Commercial 1.2.2

5.13.1 Description of COTS

Sendmail is a product whose principal function is transporting mail from a user on one machine to another user on the same or a different machine. Sendmail utilizes Domain Name System (DNS) to translate hostnames into network addresses.

As part of Security Proposal 1028.1, a commercial sendmail product will be implemented with Solaris 8. The commercial sendmail product, Sendmail Advanced Message Server or SAMS. Will extend the functionality of sendmail. Product includes simplified administration and management tools, the latest in email server security, efficiently scalable POP/IMAP message stores and LDAP services, mail network unification and content filtering, while offering add-on solutions for Web mail.

5.13.2 Rationale for Upgrade

A more recent version of sendmail was identified for Solaris 8 because of security concerns. The commercial version will provide a level of support not available with freeware versions. Additional security features are also available with the commercial version.

5.13.2.1 Vendor Support

Consistent and reliable product support and security upgrades are the primary upgrade drivers.

5.13.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.13.2.3 Features/Performance Upgrades

Additional security features are expected from this upgrade.

5.13.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.13.2.5 Operating System Compatibility

Product has not been certified for compatibility with Solaris 2.5.1, and therefore may not be backward compatible. Delivery is intended for Solaris 8 only.

5.13.2.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product.

5.13.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.13.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

5.13.5 Security Impact

No security impacts have been identified for this COTS product.

5.13.6 Licensing Impact

License keys are required for this product and they will be addressed in the PSR document.

5.13.7 External Drivers

No external drivers have been identified for this COTS product.

5.13.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.13.9 COTS Installation Sequence/Dependencies

The Solaris 8 Operating System upgrade is required to be installed before upgrading the COTS product.

5.14 TCL/tk 8.3.3

5.14.1 Description of COTS

The Tool Command Language (Tcl) is a general-purpose command language that could be linked into an application and extended with application specific commands. The version 8.3.3 will be used for the Solaris 8 upgrade.

Extensions add greater functionality to Tcl/Tk:

- INCR Tcl
- TkTree
- INCR Tk
- INCR Widgets
- BLT
- Sybtcl
- Groupkit
- TclX
- Tcl-Dp
- Expect
- NEDIT
- VISUAL TCL

5.14.2 Rationale for Upgrade

TCL and its extensions are freeware and therefore have formal no end of support dates. The consortiums and distributor of freeware products are similarly focused on the most recent

versions. The limited documentation and support that is available with freeware versions also is focused on the most versions, which recommends upgrades when schedules permit.

5.14.2.1 Vendor Support

Freeware product continues to evolve rapidly. Recompile required for Solaris 8 compatibility and upgrade will be include in order to mitigate possible compatibility risks that could appear with older versions. In addition, what limited support/documentation is provided for freeware products, is typically only updated for the most current versions.

5.14.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.14.2.3 Features/Performance Upgrades

No additional features or performance upgrades are expected from this upgrade.

5.14.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.14.2.5 Operating System Compatibility

Product has been compiled and tested only for compatibility with Solaris 8, and therefore may not be backward compatible. Delivery is intended for Solaris 8 only.

5.14.2.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product.

5.14.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.14.4 Custom Code Impact

TCL/tk is used for ECS Assist to deliver the custom code. New version has been downloaded and installed to begin testing and integration of the upgrade with custom code delivery.

5.14.5 Security Impact

No security impacts have been identified for this COTS product.

5.14.6 Licensing Impact

There are no licensing issues with this software but it may only be installed on the appropriate hardware.

5.14.7 External Drivers

No external drivers have been identified for this COTS product.

5.14.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.14.9 COTS Installation Sequence/Dependencies

The Solaris 8 Operating System upgrade is required to be installed before upgrading the COTS product.

5.15 Crack 5.0

5.15.1 Description of COTS

Crack is a password guessing program that is designed to quickly locate insecurities in Unix (or other) password files by scanning the contents of a password file, looking for users who have misguidedly chosen a weak login password.

5.15.2 Rationale for Upgrade

An upgrade to version 5.0 is planned to incorporate the most recent security features and fixes.

5.15.2.1 Vendor Support

Crack is freeware and therefore does not have formal end of support dates. The consortiums and distributors of freeware products are similarly focused on the most recent versions. The limited documentation and support that is available with freeware products also is typically focused on the most versions. For this reason, freeware upgrades are recommended whenever schedules permit.

5.15.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.15.2.3 Features/Performance Upgrades

No additional features or performance upgrades are expected from this upgrade.

5.15.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.15.2.5 Operating System Compatibility

Product has been compiled and tested only for compatibility with Solaris 8, and therefore may not be backward compatible. Delivery is intended for Solaris 8 only.

5.15.2.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product.

5.15.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.15.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

5.15.5 Security Impact

No security impacts have been identified for this COTS product.

5.15.6 Licensing Impact

There are no licensing issues with this software.

5.15.7 External Drivers

No external drivers have been identified for this COTS product.

5.15.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.15.9 COTS Installation Sequence/Dependencies

The Solaris 8 Operating System upgrade is required to be installed before upgrading the COTS product.

5.16 Tripwire 1.3.1

5.16.1 Description of COTS

Tripwire version 1.3.1 is a tool that aids in the detection of unauthorized modifications of files resident on UNIX systems. This utility will check files and directory integrity by comparing a designated set of files and directories against information stored in a previously generated database. Tripwire flags and logs any differences, including added and deleted entries. When run against system files regularly, Tripwire spots any changes into its database, and notifies the system administrator of corrupted or tampered files so that they can take damage control measures quickly and effectively. With Tripwire, system administrators can conclude with a high degree of certainty that a given set of files remain free of unauthorized modifications if Tripwire reports no changes.

5.16.2 Rationale for Upgrade

Recompile of version 1.3.1 is planned for Solaris 8 compatibility. No more recent version is available.

5.16.2.1 Vendor Support

Version 1.3.1 is the most recent freeware version available.

5.16.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.16.2.3 Features/Performance Upgrades

No additional features or performance upgrades are expected from this upgrade.

5.16.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.16.2.5 Operating System Compatibility

Product has been compiled and tested only for compatibility with Solaris 8, and therefore may not be backward compatible. Delivery is intended for Solaris 8 only.

5.16.2.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product.

5.16.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.16.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product. Product is freeware.

5.16.5 Security Impact

No security impacts have been identified for this COTS product.

5.16.6 Licensing Impact

There are no licensing issues with this software but it may only be installed on the appropriate hardware.

5.16.7 External Drivers

No external drivers have been identified for this COTS product.

5.16.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.16.9 COTS Installation Sequence/Dependencies

The Solaris 8 Operating System upgrade is required to be installed before upgrading the COTS product.

5.17 Sybase Open Client 12.0 for Solaris

5.17.1 Description of COTS

Open Client provides a portable, standard interface for client applications, which need to communicate with a Sybase SQL Server. Open Client includes both DBLIB and CTLIB libraries. Open Client supports:

- code portability between supported operating systems
- network transparency
- code modularity

5.17.2 Rationale for Upgrade

Open Client has a major custom code impact. Upgrade of this COTS product requires a custom code release. This product will be upgraded with the other Solaris 8 custom code so that another custom code version would not be impacted. End of support is another primary upgrade driver.

5.17.2.1 Vendor Support

End of support for Open Client version 11.1.1 is targeted for 12/31/2001. OpenClient 12 is compatible with the Sybase products that will be baselined with the Solaris 8 Transition and the Sybase products that will be upgraded and baselined after the Solaris 8 upgrade. These upgrades and compatibility tables are provided in section 6.

5.17.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.17.2.3 Features/Performance Upgrades

No additional features or performance upgrades are expected from this upgrade.

5.17.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.17.2.5 Operating System Compatibility

Product has been tested only for compatibility with Solaris 8, and therefore may not be backward compatible. Delivery is intended for Solaris 8 only.

5.17.2.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product.

5.17.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.17.4 Custom Code Impact

There are significant custom code impacts to this upgrade and these will be included with the Solaris 8 custom code delivery.

5.17.5 Security Impact

No security impacts have been identified for this COTS product.

5.17.6 Licensing Impact

There are no licensing issues with this software.

5.17.7 External Drivers

No external drivers have been identified for this COTS product.

5.17.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.17.9 COTS Installation Sequence/Dependencies

The Solaris 8 Operating System upgrade is required to be installed before upgrading the COTS product.

5.18 Acrobat Reader 4.05

5.18.1 Description of COTS

Acrobat Reader provides the capability to view, distribute, and print documents in Portable Document Format (PDF) – regardless of the computer, operating system, fonts, or application used to create the original file. PDF files retain all the formatting, fonts, and graphics of the original document.

5.18.2 Rationale for Upgrade

The primary driver for upgrade is having the capability to read the most recent .pdf documents available. Documents being created with version 4.05 cannot be read by the 3.0 Acrobat Reader.

5.18.2.1 Vendor Support

Vendor has released version 5.0 for Windows and MAC. No UNIX versions have been released and no availability date has been identified for this freeware product. Due to scheduling impacts, upgrade will utilize the most recent versions available. Version 4.05 will be used for Solaris 8. The SGI IRIX version is already at version 4.05, the most recent version available for that platform.

5.18.2.2 NCRs

No NCRs are associated with this upgrade.

5.18.2.3 Features/Performance Upgrades

No additional features or performance gains are expected with upgrade, except the capability of being able to read the most recent pdf formats available.

5.18.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.18.2.5 Operating System Compatibility

Version is compatible with Solaris 2.5.1 and Solaris 8, but will be delivered and automounted for Solaris 8 only. The Solaris 2.5.1 automount version will still be available for roll-back. Automounted 2.5.1 versions will not be removed until the Solaris 8 Transition is completed.

5.18.2.6 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

5.18.3 Operational Impacts

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

5.18.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

5.18.5 Security Impact

No security impacts have been identified for this COTS product.

5.18.6 Licensing Impact

There are no license keys associated with this freeware product.

5.18.7 External Drivers

No external drivers have been identified.

5.18.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.18.9 COTS Installation Sequence/Dependencies

No installation sequence dependencies or other COTS product dependencies have been identified for this COTS product.

5.19 IDL 5.5

5.19.1 Description of COTS

Interactive Data Language (IDL) is a complete package for the interactive reduction, analysis, and visualization of scientific data and images. Optimized for the workstation environment, IDL integrates a responsive array oriented language with numerous data analysis methods and an extensive variety of two and three-dimensional displays into a powerful tool for researchers.

IDL supports an extensive data import capability, publication quality hard copy output, and user-defined Motif graphical user interfaces. Users can create complex visualizations in hours instead of weeks with the aid of IDL's high level capabilities and interactive environment. IDL is useful in physics, astronomy, image and signal processing, mapping, medical imaging, statistics, and other technical disciplines requiring visualization of large amounts of data.

5.19.2 Rationale for Upgrade

Support for Solaris 8 is the primary upgrade driver. Vendor support is additional driver for upgrade to IDL 5.5. Both IDL 5.1 for Solaris and IDL 5.3 for IRIX are at end of support with the release of IDL 5.5. Both Solaris and IRIX will be upgraded to version 5.5.

5.19.2.1 Vendor Support

Both IDL 5.1 for Solaris and IDL 5.3 for IRIX are at end of support with the release of IDL 5.5. Support for Solaris 8 is provided with IDL 5.5, which was released November 2001. In order to mitigate future end of support risks, work on this COTS product was scheduled to allow for the targeted delivery of the most recent version, 5.5. Version 5.4, which also supports Solaris 8, would have been used if delivery of IDL 5.5 had been delayed.

5.19.2.2 NCRs

No NCRs are outstanding for this COTS product.

5.19.2.3 Features/Performance Upgrades

No additional performance or features are expected with this upgrade.

5.19.2.4 Cross Software Product Compatibility

IDL 5.5 provides support for HDF 4.1r3. ECS will deliver 4.1r5 for Solaris 8. In working the potential compatibility issues this could generate, it was identified that the file formats for HDF 4.1r3 and HDF 4.1r5 are identical. It was also identified that the features that were added to HDF 4.1r4 and HDF 4.1r5 are not used by ECS. After review by the Development Organization and the Science Office, it was determined that there would be no compatibility issues between IDL 5.5 and HDF 4.1r5, as it is intended to be used in ECS.

5.19.2.5 Operating System Compatibility

Product is certified by the vendor for Solaris 8 compatibility only and therefore may not be backward compatible with Solaris 2.5.1. Delivery intended for Solaris 8 only.

5.19.2.6 Hardware Product Compatibility

There are no hardware compatibility issues associated with this upgrade.

5.19.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the IDL PSR and the Solaris 8 Transition PSR.

5.19.4 Custom Code Impact

IDL upgrade expected to impact EcDpAtCheckHdfFile on Sun/Toolkit on SGI.

5.19.5 Security Impact

No security impacts have been identified for this COTS product.

5.19.6 Licensing Impact

License keys are required for this COTS product. Procedures to obtain/install the license keys will be included with the PSR.

5.19.7 External Drivers

No external drivers have been identified for this COTS product.

5.19.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.19.9 COTS Installation Sequence/Dependencies

No installation sequence or other dependencies have been identified with this COTS product.

5.20 Ghostview 1.5 binary for Solaris 8

5.20.1 Description of COTS

GhostView is a freeware product provided by the GNU Software Foundation that enables reading of PostScript formatted files. This product is provided as a utility to enable access to files that may be of interest within the project that are available only in standard PostScript format.

5.20.2 Rationale for Upgrade

Solaris 8 compatibility is needed. No more recent versions are available. GhostView is only available as source code. No binaries are provided. A recompile for Solaris 8 is needed.

5.20.2.1 Vendor Support

A Solaris 8 binary for current 1.5 versions is needed for Solaris 8 Transition.

5.20.2.2 NCRs

No NCRs are outstanding for this COTS product.

5.20.2.3 Features/Performance Upgrades

No additional performance or features are expected with this upgrade. No version upgrades are available.

5.20.2.4 Cross Software Product Compatibility

Product is certified by the vendor for Solaris 8 compatibility only and therefore may not be backward compatible with Solaris 2.5.1. Delivery intended for Solaris 8 only.

5.20.2.5 Operating System Compatibility

Version is compatible with Solaris 2.5.1 and Solaris 8, but will be delivered and automounted for Solaris 8 only. The Solaris 2.5.1 automount version will still be available for roll-back. Automounted 2.5.1 versions will not be removed until the Solaris 8 Transition is completed.

5.20.2.6 Hardware Product Compatibility

There are no hardware compatibility issues associated with this upgrade.

5.20.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the Automounted COTS PSR Bundle and the Solaris 8 Transition PSR. To minimize operational impact, all automounted COTS products, will be PSRed together, including this COTS product.

5.20.4 Custom Code Impact

There are no custom code impacts identified for this upgrade.

5.20.5 Security Impact

No security impacts have been identified for this COTS product.

5.20.6 Licensing Impact

There are no license impacts with this COTS product.

5.20.7 External Drivers

No external drivers have been identified for this COTS product.

5.20.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.20.9 COTS Installation Sequence/Dependencies

No installation sequence or other dependencies have been identified with this COTS product.

5.21 Dashboard COTS for Solaris 8

5.21.1 Description of COTS

Dashboard consists of Dashboard custom code and COTS products. Refer to Section 0, 4.13 Dashboard COTS Software Status for discussion of current status of Dashboard as a DAAC Unique Extension (DUE) under Solaris 2.5.1.

ECS has identified xxmss20 as the target host for both the Dashboard Application Server COTS products and the Dashboard Web Server COTS products. Migration of the Dashboard Web Server COTS is expected to occur as part of the Solaris 8 Transition. The DAACs with the support of the Dashboard Team are expected to make this transition, as the COTS products are planned for delivery only for xxmss20.

Delivery of Dashboard COTS products are targeted for xxmss20, except for the COTS products (jConnect and PERL) that are automounted that are discussed in the following paragraphs.

The PSR for jConnect 5.2 (EBF9747) for Solaris has been delivered in December 2001. Since jConnect is a 100% JAVA application, it has no platform dependency and jConnect 5.2 will be compatible and accessible from both Solaris 2.5.1 and Solaris 8 as an automounted COTS application. Version 5.2 of jConnect supports Sybase ASE 10.0.2 through 12.0. It is expected that Dashboard will utilize this automounted version. An upgrade to jConnect 5.5 is planned as a Post-Solaris upgrade for certification with ASE 12.5. The jConnect 5.5 upgrade, discussed in Section 7.6, jConnect 5.5, will also be automounted.

PERL 5.6.1 is planned to be delivered for Solaris 8 as an automounted COTS. This upgrade is discussed in Section 5.10, PERL 5.6.1. Dashboard DUE implementation is encouraged to make use of this automounted PERL implementation, as this PERL upgrade and follow-on PERL upgrades will only be delivered as automounted installations.

An upgrade to JRE 1.3.1_01 is also planned for Solaris 8 delivery. Since JRE is used by the DAR-tool and Data Pool custom code, JRE 1.3.1_01 will be delivered in Solaris 8 Transition for the appropriate machines, including xxmss20. JRE for IRIX will be upgraded to version 1.3.1. Refer to Section 5.6, JRE for Solaris (1.3.1_01 for additional information.

5.21.2 Rationale for Upgrade

The COTS identified in Table 5-7 will be delivered for Solaris 8 in the Solaris 8 Transition. Some COTS used by Dashboard, such as jConnect, JRE and PERL will be separately delivered as discussed in the section above and at the referenced sections in this document. Other COTS, including Apache Web Server and Tomcat, will be used by Data Pool on xxmss20 machines also. Data Pool delivery is planned for January 2002. Solaris 8 will provide support for the same versions of Apache Web Server and Tomcat that were delivered with Solaris 2.5.1 Data Pool Java and Web Services PSR. Refer to Section 5.22, Data Pool COTS for Solaris 8, for additional information on Data Pool COTS for Solaris 8.

Table 5-7. Dashboard COTS Software for Solaris 8

Product	Version	Also Data Pool COTS	Host	COTS Deployment	Comment
PopChart Image Server/Image Builder	3.8	No	xxmss20	OPS	Currently deployed version 3.8 is compatible with Solaris 8 as well as Solaris 2.5.1.
Apache Server	1.3.22	Yes	xxmss20	OPS	Upgrade from current Dashboard DUE implementation
Jakarta Tomcat	3.2.3	Yes	xxmss20	OPS	Upgrade from current Dashboard DUE implementation
mod_ssl	2.8.5-1.3.22	No	xxmss20	OPS	Upgrade from current Dashboard DUE implementation – required because of Apache 1.3.22 upgrade.
OpenSSL	0.9.6c	No	xxmss20	OPS	Original versions specified at 0.9.x.
MM	1.1.3	No	xxmss20	OPS	Original versions specified at 1.1.x. Should be at same version.

5.21.2.1 Vendor Support

No upgrade is required for PopChart for Solaris 8, as currently deployed version 3.8 is compatible with Solaris 2.5.1 and Solaris 8. The installation instructions for version 3.8 is provided in document # 914-TDA-154 (Dashboard Phase 2 Release Document). The remaining Dashboard products are freeware. The freeware products will be recompiled for Solaris 8, as binaries are not available.

5.21.2.2 NCRs

There are no NCRs specifically against these COTS products.

5.21.2.3 Features/Performance Upgrades

No features or performance enhancements are expected with these upgrades.

5.21.2.4 Cross Software Product Compatibility

The Apache and Tomcat versions used by Data Pool were more recent versions than those originally delivered in Dashboard Phase 2. In an effort to standardize on a single version, the more recent Data Pool versions of Apache and Tomcat will be delivered for xxmss20 for Solaris 8. Although Data Pool does not use the mod_ssl freeware, this freeware is dependent on an

Apache version. Upgrade to mod_ssl version 2.8.5-1.3.22 will be targeted to maintain compatibility with the planned Apache version 1.3.22. There are no other compatibility issues.

5.21.2.5 Operating System Compatibility

Products have been compiled and tested for Solaris 8 only and therefore may not be backward compatible.

5.21.2.6 Hardware Product Compatibility

A hardware upgrade is planned for xxmss20 for Dashboard. This is discussed in detail in Section 8.5, Dashboard/Data Pool MSS20 Hardware Upgrades, It should be noted that this hardware upgrade requires Solaris 2.6 or above, so the hardware upgrade will not occur until the Solaris 8 Transition or after the Solaris 8 Transition. DAACs may want to consider this in plans to migrate the current Dashboard Web Server COTS from the current M&O LAN hosts to the ECS recommended xxmss20 host.

5.21.3 Operational Impacts

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSRs and the Solaris 8 Transition PSR.

5.21.4 Custom Code Impacts

No Dashboard custom code testing at EDF is planned as Dashboard custom code is a DUE.

5.21.5 Security Impact

Upgrade to Apache 1.3.22 was selected because of security patches included in this version.

5.21.6 Licensing Impact

No licensing impacts are expected. Products to be upgraded are freeware.

5.21.7 External Drivers

Current plans have identified that both Data Pool and Dashboard will utilize a single version of Apache and Tomcat on xxmss20. Upgrades to either product must consider impacts to both Dashboard and Data Pool.

5.21.8 Other Impacts/Comments

No other impacts have been identified.

5.21.9 COTS Installation Sequence/Dependencies

There are no known installation sequence dependencies.

5.22 Data Pool COTS for Solaris 8

5.22.1 Description of COTS

A group of Web Server and Java COTS products will be delivered for Solaris 2.5.1 to support Data Pool. These products are identified in Table 5-8. The same COTS products are planned for delivery for Solaris 8. All are freeware products that will be recompiled for Solaris 8.

Table 5-8. Data Pool Web and Java COTS Products for Solaris 2.5.1 & 8

Product	Solaris 2.5.1 Version	Solaris 8 Version	Targeted Host	Solaris 2.5.1 JRE version	Solaris 2.5.1 JRE version	IRIX JRE version (Solaris 8 Transition)
Apache	1.3.22	1.3.22	x0mss20	1.2.2	1.3.1_01	
Tomcat	3.2.3	3.2.3	x0mss20	1.2.2	1.3.1_01	
Velocity	1.1	1.2	x0mss20	1.2.2	1.3.1_01	
JDOM	1.0beta7	1.0beta7	x0mss20	1.2.2	1.3.1_01	
JDOM	1.0beta7	1.0beta7	x0dig06	1.3		1.3.1
Web Glis	3.2.1	3.2.1	x0mss20	1.2.2	1.3.1_01	
JDBC API	2.0	2.0	x0mss20	1.2.2	1.3.1_01	

5.22.2 Rationale for Upgrade

COTS products are needed to support Data Pool custom code delivery.

5.22.2.1 Vendor Support

There are no vendor support issues. All products are freeware and the most recent version are selected for delivery for Solaris 2.5.1. Recompiled Solaris 8 binaries will be targeted for Solaris 8 at the same version levels.

5.22.2.2 NCRs

No NCRs are associated with these COTS/freeware products.

5.22.2.3 Features/Performance Upgrades

Products are new deliveries for Solaris 2.5.1 and these versions will be continued for Solaris 8.

5.22.2.4 Cross Software Product Compatibility

Dashboard currently uses Apache Server and Tomcat, at lower versions as DUE. It is expected that Apache Server, Tomcat and the other Dashboard Web Server products will migrate to x0mss20 and will utilize the x0mss20 Data Pool baselined versions of these products prior to or during the Solaris 8 Transition. One Dashboard product, mod_ssl, has dependencies on the Apache version used. An upgrade of mod_ssl is planned for compatibility with the targeted Data Pool Apache version. Also refer to Section 5.21, Dashboard COTS for Solaris 8 for additional information.

5.22.2.5 Operating System Compatibility

Solaris 8 binaries are planned to be recompiled and delivered for Solaris. Solaris 2.5.1 versions may not be backward compatible.

5.22.2.6 Hardware Product Compatibility

There are no hardware product compatibilities with any of these products.

5.22.3 Operational Impact

Some operational impacts are expected to install all COTS products.

5.22.4 Custom Code Impact

Data Pool requires these COTS products and Data Pool custom code has been tested with the targeted versions.

5.22.5 Security Impact

Although there is some small potential security risk with Apache Web Server, the firewall, which will closely follow the Data Pool delivery, will make these potential small security risks a non-issue.

5.22.6 Licensing Impact

All products in this delivery are freeware, therefore there are no licensing issues.

5.22.7 External Drivers

No external drivers beyond support for Data Pool have been identified.

5.22.8 Other Impacts/Comments

One COTS product, JDOM, has been identified as a beta product. A waiver has been approved for delivery of a beta version. The justification identified that there is a much lower level of risk with a beta freeware product, such as JDOM, than there would be with a beta version of a commercial product. With a commercial product, the vendor may no longer support the “beta” version, forcing an immediate upgrade. The process the JDOM group is following is the same as with “officially” released versions of freeware as is used for the “beta” versions. While commercial product vendors offer bug fixes for supported versions, this practice is not followed with freeware, beta or official. A new version is offered and upgrade is necessary to mitigate risk for both the beta version and the “official” version.

5.22.9 COTS Installation Sequence/Dependencies

Products in this delivery should be installed with or prior to Data Pool custom code. JRE is required for some Data Pool hosts. CCR 01-0847 was submitted and approved to install JRE 1.2.1 on x0mss20 hosts and verify JRE 1.3 has been installed on x0dig06. These installations are required before installing the COTS identified in this section and the Data Pool custom code.

5.23 Forcheck 12.84

5.23.1 Description of COTS

Forcheck is a FORTRAN language checker used to debug FORTRAN language programs.

5.23.2 Rationale for Upgrade

The primary driver for upgrade is end of support for current version as of 12/31/2001.

5.23.2.1 Vendor Support

Vendor has identified that current version will reach end of support as of 12/31/2001.

5.23.2.2 NCRs

No NCRs are associated with this upgrade.

5.23.2.3 Features/Performance Upgrades

No additional features or performance gains are expected with this upgrade.

5.23.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.23.2.5 Operating System Compatibility

Forcheck 12.84 is compatible with Solaris 2.5.1 and Solaris 8.

5.23.2.6 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

5.23.3 Operational Impacts

No operational impacts have been identified beyond installation downtime and impacts identified in the PSR.

5.23.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

5.23.5 Security Impact

No security impacts have been identified for this COTS product.

5.23.6 Licensing Impact

License keys are required for this COTS product. Procedures to obtain/install the license keys will be included with the PSR.

5.23.7 External Drivers

No external drivers have been identified.

5.23.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.23.9 COTS Installation Sequence/Dependencies

No installation sequence dependencies or other COTS product dependencies have been identified for this COTS product.

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6. COTS Software Removals/Replacements

Information on ECS COTS products is gathered on a continuous basis in the Systems Engineering Compatibility Matrix. Issues related to COTS products are also obtained at the weekly CUT group meetings. Occasionally, a product is identified that needs to be removed or replaced. When the potential for removal or replacement is identified, feedback is sought from the appropriate organizations, including Systems Engineering, Development and the DAACs. When agreement is reached, a plan is developed for the removal or replacement of the COTS product. The sections following discuss COTS products under consideration for removal or replacement.

6.1 COTS Software Removals/Replacements/Reconsiderations

The following COTS products were identified in Volume 5 as candidates for replacement or removal. The review process for removal or replacement has been completed. The resolution is discussed below.

6.1.1 DOTS To be Retained

In Volume 5 of this document, DOTS was identified for removal with a phase 1 Remedy Migration of NCR capabilities and a phase 2 migration of CCR capabilities. Work has stopped on this project. DOTS will be retained at current version on Solaris 2.5.1 through the Solaris 8 Transition and upgraded as to version 4.7 as a Post-Solaris upgrade when the CM Server is upgraded to Solaris 8. Refer to Section 7.8, DOTS 4.7 for additional details.

6.1.2 Loadrunner Removal

LoadRunner has been removed from the DAAC baseline with CCR 01-0715. It is currently used only on NT servers in the PVC.

6.1.3 Xrunner Removal

CCR 01-0715 was approved for removal of XRunner in all sites. Xrunner is no longer used by the test organization.

6.1.4 SATAN Removal

CCR 01-0644 removed SATAN from the baseline. SATAN is no longer needed based on Security Proposal 2810.1, as ECS is no longer responsible for providing tools for penetration testing.

6.1.5 DBVision Removal

DBVision enables DBAs to monitoring of complex RDBMS environment. DBVision was originally a Sybase utility provided with the original Sybase procurement. The utility was

acquired by Platinum, which released the DBVision product. Platinum was acquired by Computer Associates (CA) in 1999.

While version 3.1.8 will support Sybase 11.9.2 and will be supported on current operating systems, the product is being phased out and more recent Sybase databases (12.0) and Solaris Operating Systems (Solaris 8) are not planned to be supported by the vendor. Computer Associates (CA) is offering migration to a new product called, ManageIT Performance. ManageIT version 4.3 will support Solaris 8 and Sybase ASE 12.0. The vendor provided a demonstration to the DDM group. The following items were identified as needed to support ManageIT Performance as a replacement for DBVision:

- Unlike DBVision, product is not a standalone product, it requires installation and maintenance within a System Management Framework, similar to Tivoli. The System Management Framework is called TNG.
- The TNG System Management Framework and the ManageIT Performance module are only supported on an NT platform, although they can be utilized to monitor databases on Solaris and IRIX hosts.
- No NT hosts are currently configured in the hardware baseline to support this replacement COTS. Hardware procurement may be needed to support NT operating system.

The DDM group reviewed the level 3 and level 4 requirements associated with this product. DDM conclude that Sybase Central, SQL Monitor and the SP Sysmon utility meet all level 3 and 4 requirements. This analysis combined with minimal usage at the DAACs and identification of new hardware and additional COTS requirements that would be needed if a replacement product was selected has led DDM to recommend removal of the COTS product. The Architect's Office has reviewed and concurred with the recommendation by DDM to remove DBVision rather than replace it with another CA tool.

CCR 01-0603 removed DBVision from the ECS Baselines in July 2001. No issues or impacts have been reported.

6.1.6 DCE Removal

End of life and end of support issues with supporting DCE on Solaris 2.5.1 were identified. New products would need to be procured because existing versions were not "upgradable", they were considered as new products by the vendor, IBM. A decision was made to migrate to sockets to mitigate these risks. ECS custom code no longer utilizes DCE. An alternative Time Services implementation will be provided by NTP. NTP PSR is discussed in Section 0, 4.2 Network Time Protocol (NTP).

DCE components are planned to be removed with delivery of NTP PSR discussed in Section 4. The Engineering Technical Directive to remove DCE has been drafted and is awaiting testing with the NTP PSR.

6.1.7 IQ Removal

Intelligent Query and IQ Access 5.5.0.1 are a pair of tools that let you easily extract and organize information from your database. Output can be easily formatted and data moved to other applications such as spreadsheets and word processors. SQR Server is capable of processing reports of any complexity from databases of any size.

As part of a review to identify if the two Report Writers delivered to the DAACs were both needed, it was identified that both Report Writers, IQ and SQR, had no reported usage at the DAACs. Some DAACs have no version of IQ installed. The DAACs are reporting that they utilize other tools to provide report writing capabilities.

After review by the Architect's Office, it was agreed that there were level 3s and level 4s requirements for a report writer product. The Architect's Office recommended that a Report Writer product be provided to meet these requirements.

Both IQ and SQR met all of the identified level 3 and level 4 requirements. However, only one Report Writer product was needed to satisfy these requirements. Feedback from the DAACs indicated neither product was in use. In analysis of Solaris 8 COTS baseline, it was identified that there was no current or planned version of IQ that would be certified for Solaris 8 and Sybase 12/12.5. SQR, currently called Brio Report, had a version that was certified for Solaris 2.5.1, Solaris 8 and Sybase Open Client 12. In order to mitigate schedule and compatibility risks, Brio Report was selected to be the Report Writer delivered for Solaris 8. This upgrade is discussed in detail in Section 5.

With this decision made, DDM and the DAACs provided feedback that IQ could be removed from the baseline and DAAC hosts. CCR 01-0907 removed IQ from all EDF and DAAC baselines. Upgrade of SQR (Brio Report) will be done as a Post-Solaris upgrade. Refer to section 7.12, Brio Report 6.2 (SQR) for additional information.

6.1.8 Anlpassword Replacement

Anlpassword is a freeware product that provides password checking features supporting ECS security policies. This freeware product has not been updated for more recent password features such as shadow passwords. No further work is planned beyond current version. Commercial product replacement was proposed and approved to replace the Anlpassword freeware and meet the level 3 and 4 requirements associated formerly met with Anlpassword.

ECS Chief Engineer has identified the product for replacement. A replacement product was proposed and approved in NPG 2810-1 (Security of Information Technology) submission. Evaluation of possible replacement products is in progress. Two products are being identified for evaluation as replacement products:

- eTrust from Computer Associates
- SecureWay from Tivoli

Computer Associates eTrust product has been installed in the EDF. Evaluation is in progress. Plans are to install Tivoli's SecureWay are pending availability of support for SGI IRIX 6.5. Evaluation is in progress.

6.1.9 Exabyte Driver Replacement Under Review

The Exabyte Driver is used to support 8mm tape stacker units. It is a freeware product that has not been supported by the vendor for three years. Solaris 8 had not been released when support was dropped by Exabyte. Testing is needed to verify that the Exabyte driver 3.0 is binary compatible with Solaris 8 and perform its current functions within the Solaris 8 environment.

In EDF testing, RTSC has identified that the Exabyte driver functions correctly with all but Sun E450 devices. Exabyte Drivers are used only on Sun E450s in the EDF. There are no Sun E450s at the DAACs. A workaround has been identified in the EDF, so that Solaris 8 Transition activities may proceed. This COTS product will be monitored for other problems during Solaris 8 Transition testing.

In addition to the E450 issue, there are long term support concerns related to this currently unsupported driver. The CUT Team will review ReelRobot SRI and other replacement alternatives for possible Solaris 8 or Post-Solaris replacement.

6.1.10 Other Product Changes to be Noted

Some products have been replaced by another product, sometimes from the same vendor. These are described in Table 6-1 and described in more detail in other sections of this document.

Table 6-1. COTS Products Targeted for Replacement by Another Product (1 of 2)

COTS Baseline Product	Replacement Product	Comment
JetAdmin	Jet Direct E.10.18	JetAdmin will reach end of support 01/31/2002. HP's suggested replacement product, WebJetAdmin was evaluated. Product was evaluated not be an adequate replacement. Other HP Print services are targeted for replacement of this product. This product is described in section 5.8, JetDirect E.10.18. Print Services bundled with Solaris 8 are also being reviewed.
XRP-II	Remedy 4.5.2	XPR-II is a product with significant risks for end of contract turnover. XRP-II is a customized COTS product that does not provide regular upgrades under a standard maintenance contract. Additional fees are required for upgrades such as for new operating system versions, normally covered by standard maintenance. Additionally, the database in use by the XRP-II vendor has been at end of support by the database vendor (Unify) for over two years. Major updates, not covered by existing maintenance, would be needed to mitigate risk. The cost of these upgrades required to mitigate risk are being evaluated against the costs and risks of migrating XRP-II functionality to Remedy.

Table 6-1. COTS Products Targeted for Replacement by Another Product (2 of 2)

COTS Baseline Product	Replacement Product	Comment
Visual Workshop SPARC Compilers	Forte 6.1	Sun has replaced the Visual Workshop product and SPARC Compilers with Forte Developer. Previous licenses have been transferred to Forte C, C++ and FORTRAN suites. These are Sun products, not third party products. This product is described in section 5.4, Forte Developer.

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7. Post-Solaris 8 Upgrades

Once the Solaris 8 transition is completed and stabilized, upgrades of Sybase COTS products are planned to mitigate end of support risks. Sybase Open Client will be upgraded to version 12.0 with the Solaris 8 COTS and custom code releases. The Post-Solaris Sybase Product upgrades are identified in Table 7-1 below.

Table 7-1. Post-Solaris 8 COTS Upgrades

COTS Product	Baseline Version at Solaris 8	Planned Upgrade version	Upgrade Rationale	Schedule
StorEdge Volume Manager	3.0.4	3.2	Version 3.0.4 is the last version to support both Solaris 2.5.1 and Solaris 8. Version 3.0.4 was used for flexibility in the Solaris Transition. Upgrade to version 3.2 is planned because of hardware patches that are not available for 3.0.4 on Solaris 8.	Immediately after Solaris 8 Transition.
ClearCase	4.1	4.2 or later	End of support for 4.1 will occur 11/2002	TBD
Sybase ASE for Solaris	11.9.2	12.5	End of Support for 11.9.2 on Sun is identified as occurring on 03/31/2002.	7/2002
Sybase ASE for Autosys Servers	11.9.2	12.0	End of Support for 11.9.2 on Sun is identified as occurring on 03/31/2002.	7/2002
Sybase ASE/SQL Monitor for IRIX	11.9.3	12.5	End of Support for 11.9.3 on SGI is identified as occurring on 06/30/2002.	7/2002
Sybase Central for Win95	3.0	4.0	Version has reached end of support. Version bundled with 12.5 is required for compatibility with Sybase ASE 12.5, which will be implemented on IRIX. Backward compatibility issues are being tracked as identified by vendor.	7/2002
Sybase Replication Server/Manager	11.5.1	12.1	End of Support for 11.5.1 on Sun is identified as occurring on 03/31/2002.	05/2002
Tivoli Client/Server: Management Framework	3.6.3	3.7.1	End of life for 3.6 series expected 4/2002. Upgrade of Tivoli components is required to occur before Sybase ASE 12.0/12.5 upgrade on Sun.	Pre-Sybase ASE 12.0/12.5 Upgrade on MSS Application Server (P)
Enterprise Console	3.6.2	3.7		
Software Distribution	3.6.2	4.1		
Distributed Monitoring	3.6.2	3.7		
XRP-II	3.1.3	Remedy 4.5.2	XRP-II capabilities will be moved to a Remedy ARS implementation.	Start 04/2002

The COTS products identified in Table 7-1 above will be upgraded after the Solaris upgrades and transition are completed. Sybase OpenClient for Sun 12.0 will be upgraded from version 11.1.1 to version 12.0.0 and delivered with the Solaris 8 custom code delivery.

7.1 StorEdge Volume Manager 3.2

7.1.1 Description of COTS

StorEdge Volume Manager builds volumes on top of physical disks to provide a set of volume management capabilities such as disk striping and mirroring. Volume Manager objects can be manipulated in a variety of ways to optimize performance, provide redundancy of data, and perform backups or other administrative tasks on one or more physical disk without interrupting applications. As a result, data availability and disk subsystem throughput are improved.

7.1.2 Rationale for Upgrade

Hardware patches are needed for implementation, but are not available for Solaris 2.5.1. Therefore, after the Solaris 8 Transition is stabilized, upgrade to version 3.2, with patches is required. Versions of StorEdge that include the appropriate patches are not available for Solaris 2.5.1 versions.

7.1.2.1 Vendor Support

The current baseline version (2.6) has reached end of support. The current version also does not provide support for Solaris 8. Version 3.04 was identified as the targeted StorEdge Volume Manager version. This version has been targeted because it supports both Solaris 2.5.1 and Solaris 8. Support of both operating system versions will provide flexibility in defining transition approaches. Versions of this product have long support periods before upgrades are needed, and therefore there should low risk of reaching end of support by the end of contract. Version 3.1 has been released and is available, but does not support Solaris 2.5.1 and thereby limits transition approaches.

7.1.2.2 NCRs

No NCRs are associated with this upgrade.

7.1.2.3 Features/Performance Upgrades

No additional features or performance gains are expected with this upgrade.

7.1.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

7.1.2.5 Operating System Compatibility

The StorEdge Volume Manager version 3.0.4 is compatible with both Solaris 2.5.1 and Solaris 8, and will be backward compatible. This will provide flexibility in Transition options. A Post-Solaris upgrade to 3.2 is planned for additional hardware patch support once the Solaris 8 Transition is stabilized and no roll-backs are needed.

7.1.2.6 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

7.1.3 Operational Impacts

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

7.1.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

7.1.5 Security Impact

No security impacts have been identified for this COTS product.

7.1.6 Licensing Impact

License keys are required for this COTS product. Procedures to obtain/install the license keys will be included with the PSR.

7.1.7 External Drivers

No external drivers have been identified.

7.1.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

7.1.9 COTS Installation Sequence/Dependencies

No installation sequence dependencies or other COTS product dependencies have been identified for this COTS product.

7.2 Tivoli Server/Client 3.7.x/4.1

7.2.1 Description of COTS

Tivoli is a COTS enterprise management framework application which:

- monitors the status of networked devices, hosts and processes that run on the hosts.
- provides a central console for monitoring the enterprise
- provides an extensible framework to customize as needed.

7.2.2 Rationale for Upgrade

End of support is the primary upgrade driver.

7.2.2.1 Vendor Support

End of life for Framework and Distributed Monitoring is targeted for 4/2002.

7.2.2.2 NCRs

No NCRs are identified in association with this COTS product.

7.2.2.3 Features/Performance Upgrades

Several additional features and performance upgrades are expected from this upgrade.

7.2.2.4 Cross Software Product Compatibility

Version 3.7.1 or greater of Management Framework is required for support of Sybase ASE 12.5.

7.2.2.5 Operating System Compatibility

The identified Tivoli upgrade versions are compatible with Solaris 8 and IRIX 6.5.x. No additional operating system upgrades are planned at this time.

7.2.2.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product.

7.2.3 Operational Impact

Other than the downtime identified in the PSR for the upgrade, there are no identified operational impacts associated with this product upgrade. Upgrade occurring after the Solaris 8 Transition will reduce operational impact at the critical Solaris 8 transition stage.

7.2.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

7.2.5 Security Impact

No security impacts have been identified for this COTS product.

7.2.6 Licensing Impact

There are no licensing issues with this software. License keys are required and will be discussed in the PSR document.

7.2.7 External Drivers

No external drivers have been identified for this COTS product.

7.2.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

7.2.9 COTS Installation Sequence/Dependencies

Tivoli upgrade must occur before Sybase ASE 12.5 upgrade for compatibility with this Sybase ASE version.

7.3 Sybase ASE 12.5/12.0 (Autosys Server)

7.3.1 Description of COTS

Sybase Adaptive Server Enterprise is a multi-user relational database management system (RDBMS) which:

- provides management services
- provides control of, and information about a relational database for concurrent users

- passes information from client to server and vice versa across the network using Open Client as the standard Application Programming Interface (API)
- provides asynchronous prefetch, auditing and dbcc enhancements, point in time recovery and extended stored procedures.

7.3.2 Rationale for Upgrade

End of support dates announced by the vendor are the primary upgrade drivers. Sybase ASE 12.5 will be used for all servers except for the Autosys Server implementation. Autosys Server 3.5 does not support Sybase 12.5, but is certified with patches discussed in Section 7.4, Sybase 12.0 Patches for Autosys 3.5, for Sybase ASE 12.0. ASE 12.0 will be delivered for the Autosys Server implementation.

7.3.2.1 Vendor Support

- End of Support for 11.9.3 on SGI was identified as occurring on 12/31/2001, but has been extended until 06/30/2002 as of December 2001.
- End of Support for 11.9.2 on Sun is identified as occurring on 03/31/2002.

7.3.2.2 NCRs

No NCRs are identified in association with versions 11.9.2 and 11.9.3 of the COTS product.

7.3.2.3 Features/Performance Upgrades

Table 7-2 provides the new features to be delivered with Sybase ASE 12.0.

Table 7-2. Sybase ASE 12.0 New Features (1 of 2)

Availability and Manageability Features	Distributed Processing Features	Security Features
Rebuilding Indexes	Distributed Transaction Management	Network Security
High Performance Backup and Restore	Enhancements to Component	User-Defined Login Security
UNIX File System Support	Integration Services (CIS)	Concrete Identification
Modifying an Existing Table's Schema with alter table		
Suspending Database Updates with quiesce database		
Taking Adaptive Server Engines Offline		
User Settable Process Information		
Identity Number Gap for Tables		
Diagnostic Database		

Table 7-2. Sybase ASE 12.0 New Features (2 of 2)

Availability and Manageability Features	Distributed Processing Features	Security Features
Performance and Productivity		
Java in Adaptive Server Enterprise		
Number of Tables in a Query		
Query Processing and Optimization Enhancements		
ANSI Joins		
Dynamic Execution of Transact-SQL		
text and image Datatype Enhancements		
Disabling Triggers		
Cache Partitions		
Abstract Plans		
Non-Rewinding Tapes		

Sybase ASE 12.5 will include Sybase ASE 12.0 features identified above plus the ASE 12.5 features identified in Table 7-3.

Table 7-3. Sybase ASE 12.5 Features

Productivity for the Internet	Directory & Security Features	Administration and Quality of Service
XML Queries	Row-Level Access Control	Dynamic Reconfiguration Features
Enterprise Java Beans	Secure Sockets Layer	Quiese DB
SQLJ (including Java Stored Procedures)	LDAP Support Administration & Quality of Service	Compressed Backup
Java Infrastructure Enhancements		
Expanded page, row and char column sizes		
Below is a partial list of these new limits:		
Union-in-views		
Unicode (UTF-16)		
Component Integration Services Enhancements		
Support for External File Systems		

7.3.2.4 Cross Software Product Compatibility

Table 7-4 identifies compatibility with COTS products having Sybase ASE dependencies.

Table 7-4. COTS with Sybase ASE 12.0/12.5 Dependencies

COTS Product	Deployed as Status	COTS Baseline Product Version	Sybase ASE Compatibility
Autosys Server	OPS	3.5	Version 3.5 supports Sybase ASE 11.5.1, 11.9.2. Version 12.0 is supported with patches.
DBVision	OPS	3.1.8	Removed from baseline.
DBTools.h++/CT.lib	DEV	4.2	Supports OpenClient 11.1.1 and 12.0, which is compatible with ASE 11.9.2, 11.9.3, 12.0 and 12.5.
IQ Report Writer	OPS	5.5.01	Removed from baseline.
IRIX	OPS	6.5.6m	Supports ASE 11.9.3; 12.5
jConnect for SGI/Sun	OSS	5.5	Upgrade planned to jConnect 5.5, which will support ASE 11.5.1 through ASE 12.5.
Remedy ARS Server	OPS	4.5.2	Supports ASE 11.9.2, 12.0 and 12.5
Solaris 8	OPS	2.8	Supports Sybase ASE 11.9.2, 12.0 & 12.5
SQR (BRIO report)	OPS	6.2 (planned as Post-Solaris upgrade)	Open Client is Interface: Supports OpenClient 12 (on 2.6, 2.7 & 2.8) & Open Client 12.5 on Solaris 8 only). Open Client versions 12.0 and 12.5 are compatible with both ASE 12.0 and 12.5.
SQS (Spatial Query Server)	OPS	3.4.1	Open Client is Interface: Supports OpenClient 11.1.1 & 12. Open Client versions 11.1.1 and 12.0 are compatible with both ASE 12.0 and 12.5.
Sybase Central	OPS	4.0	Compatible with Sybase ASE 11.9.2 through 12.5
Sybase Open Client/C for SGI	OPS	12.0.0	Open Client 12.0 is compatible with 11.5.1 through 12.5/ASE 11.9.2 through 12.x
Sybase Open Client/C for Sun	OPS	12.0.0	Open Client 12.0 compatible with 11.5.1 through 12.5/ASE 11.9.2 through 12.x
Sybase Replication Server	OPS	12.1	Supports ASE 11.5.1, 11.9.2, 11.9.3, 12; 12.5
Tivoli	OPS	Management Framework 3.7.1	Supports Sybase ASE 11.9.2, 12.0, and 12.5 (Only Management Framework has Sybase Dependencies)

7.3.2.5 Operating System Compatibility

Version planned for upgrade is compatible with Solaris 8 and IRIX 6.5.x. These will be the Operating System versions at the time of the upgrade. Sybase ASE 12 and 12.5 is not supported on Solaris 2.5.1.

7.3.2.6 Hardware Product Compatibility

Sybase certifies Sybase ASE 11.9.2, 12.0 and 12.5 only on Ultra-based SPARC chips. Some Sun SPARCstations used a Hyper-SPARC chip and are therefore not certified. Sybase ASE is not currently deployed and will not be deployed during or after the Solaris 8 Transition on any non-Ultra SPARC chip hosts.

7.3.3 Operational Impact

Other than the downtime identified in the PSR for the upgrade, there are no identified operational impacts associated with this product upgrade. Upgrade occurring after the Solaris 8 Transition will reduce operational impact at the critical Solaris 8 transition stage.

7.3.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

7.3.5 Security Impact

Additional security features will be included in this version.

7.3.6 Licensing Impact

There are no licensing issues with this software. License keys are required and will be discussed in the PSR document. Automated license management is included with both ASE 12.0 and 12.5. Implementation details are in early planning stages.

7.3.7 External Drivers

No external drivers have been identified for this COTS product.

7.3.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

7.3.9 COTS Installation Sequence/Dependencies

Table 7-5 identifies installation Sequence Dependencies. Software Cross-Product dependencies are identified above in Table 7-4.

Table 7-5. Sybase ASE 12.0/12.5 Installation Sequence Dependencies

COTS Product	Upgrade Version	Installation Sequence Dependency
Autosys 3.5 Sybase Patches	3.5	Required to be installed prior to ASE 12.0
Sybase Replication Server	12.1	No Sybase ASE or other installation sequence dependencies.
Sybase Central	4.0	Required to be installed prior to ASE 12.5
jConnect	5.5	Required to be installed prior to ASE 12.5
Tivoli	3.7.x/4.1	Required to be installed prior to ASE 12.5

7.4 Sybase 12.0 Patches for Autosys 3.5

7.4.1 Description of COTS

Autosys 3.5 was delivered and installed as a Pre-Solaris upgrade. Autosys 3.5 requires additional patches to support Sybase ASE 12.0, which is the currently planned Autosys Server ASE version upgrade. Autosys patch LO80396 for Sybase ASE 12.0 support and Sybase incremental patches LO91470/L0819690/LI82921 for Autosys 3.5 will be added to support Autosys 3.5 with Sybase ASE 12.0.

7.4.2 Rationale for Upgrade

Additional patches needed for Autosys 3.5 to support Sybase ASE 12.0.

7.4.2.1 Vendor Support

Vendor end of life and/or end of support is not an issue for this upgrade.

7.4.2.2 NCRs

No NCRs are outstanding for this COTS product.

7.4.2.3 Features/Performance Upgrades

No additional performance or features are expected with this upgrade.

7.4.2.4 Cross Software Product Compatibility

Support for Sybase 12.0 is a compatibility issue is addressed by this patch upgrade.

7.4.2.5 Operating System Compatibility

Version planned for upgrade is compatible with Solaris 8. This will be the Operating System version at the time of the upgrade.

7.4.2.6 Hardware Product Compatibility

There are no hardware compatibility issues associated with this upgrade.

7.4.3 Operational Impact

No operational impacts have been identified, other than downtime needed for installation.

7.4.4 Custom Code Impact

There are no custom code impacts identified for this upgrade.

7.4.5 Security Impact

No security impacts have been identified for this COTS product.

7.4.6 Licensing Impact

License keys are required for this COTS product. Procedures to obtain/install the license keys will be included with the PSR.

There are no license impacts with this COTS product.

7.4.7 External Drivers

No external drivers have been identified for this COTS product.

7.4.8 Other Impacts/Comments

Upgrade to Autosys version 4.0, which is targeted to support Sybase ASE 12.5 is being considered. Schedule impact of availability of Generally Available (GA) version is major consideration. Autosys 4.0 is tentatively targeted to go into beta testing 01/2002.

7.4.9 COTS Installation Sequence/Dependencies

Patches should be installed prior to installation of Sybase ASE 12.0.

7.5 Sybase Replication Server/Manager 12.1

7.5.1 Description of COTS

Replication Server maintains replicated data in multiple databases while ensuring the integrity and consistency of the data. It provides clients using databases in the replication system with local data access, thereby reducing load on the network and centralized computer systems. Other features of replication are as follows:

- Enables customization of replication functions and to monitor and maintain the replication system
- Ability to request subsets of data for replication at the table, data row, or column level. This feature reduces overhead by allowing only the data needed to be replicated.
- Replication server supports heterogeneous data servers. You can build a replication system from existing databases and applications without having to convert them. As your enterprise grows and changes, you can add data servers to your replication system to meet your needs.

- Replicating tables on local data servers provides clients with local access to enterprise data, which results in improved performance and greater data availability.

Replication Server is an Open Server application that:

- Translates replication system administration requests from Sybase Central and routes them to the destination server
- Monitors and responds to the replication system events
- Can reside on any machine in your network
- Can manage an entire distributed replication system.

7.5.2 Rationale for Upgrade

Vendor end of support date of 03/30/2002 is the primary upgrade driver.

7.5.2.1 Vendor Support

End of support has been identified as 03/30/2002.

7.5.2.2 NCRs

No NCRs are identified in association with this COTS product.

7.5.2.3 Features/Performance Upgrades

The following new features will be provided in Sybase Replication Server 12.1

- Failover support in a high-availability system
- Replicating Java objects support
- alter table support
- Heterogeneous datatype support
- External security services support
- Configuration parameters to improve performance
- Counters to monitor performance
- Partition affinity—the ability to choose the disk partition to which Replication Server allocates segments
- New features and functionality in Replication Server Manager (RSM), the Sybase Central plug-in for Replication Server, include continuous notification if queue or partition changes significantly.

7.5.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues. Sybase 12.1 Replication Server is compatible with Sybase ASE 12 and 12.5.

7.5.2.5 Operating System Compatibility

Version planned for upgrade is compatible with Solaris 8. This will be the Operating System version at the time of the upgrade.

7.5.2.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product.

7.5.3 Operational Impact

Other than the downtime identified in the PSR for the upgrade, there are no identified operational impacts associated with this product upgrade. Upgrade occurring after the Solaris 8 Transition will reduce operational impact at the critical Solaris 8 transition stage.

7.5.4 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

7.5.5 Security Impact

No security impacts have been identified for this COTS product.

7.5.6 Licensing Impact

There are no licensing issues with this software. License keys are required and will be discussed in the PSR document.

7.5.7 External Drivers

No external drivers have been identified for this COTS product.

7.5.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

7.5.9 COTS Installation Sequence/Dependencies

No installation sequence dependencies or other COTS product dependencies have been identified for this COTS product, other than the installation sequences identified in the PSR.

7.6 jConnect 5.5

7.6.1 Description of COTS

jConnect is a 100% pure implementation of the JavaSoft JDBC standard. It provides Java clients native database access. This COTS product will enable Java Database Connectivity on Solaris 8

and SGI IRIX systems against Sybase Adaptive Server Enterprise SQL Server System version 11.5.1 through Adaptive Server Enterprise 12.5.

7.6.2 Rationale for Upgrade

Current baseline implementation for Solaris and IRIX (jConnect 5.2) is not certified for compatibility with ASE 12.5. Version 5.5 of jConnect has been certified for compatibility with ASE versions 11.5.1 through 12.5.

7.6.2.1 Vendor Support

Vendor support is not an issue for this upgrade.

7.6.2.2 NCRs

No NCRs are outstanding for this COTS product.

7.6.2.3 Features/Performance Upgrades

No additional performance or features are expected with this upgrade.

7.6.2.4 Cross Software Product Compatibility

Upgrade to version 5.5 is planned to assure compatibility with planned Sybase ASE 12.5 upgrade.

7.6.2.5 Operating System Compatibility

This upgrade is platform independent because jConnect is 100% Java software. This will be an automounted COTS that will be accessible by all Operating Systems, including Solaris 8 and IRIX 6.5.x. This COTS would also be compatible with Solaris 2.5.1, but this Operating System is not expected to be installed at the time of upgrade.

7.6.2.6 Hardware Product Compatibility

There are no hardware compatibility issues associated with this upgrade.

7.6.3 Operational Impact

Other than the downtime identified in the PSR, no operational impacts are expected.

7.6.4 Custom Code Impact

There are no custom code impacts identified for this upgrade.

7.6.5 Security Impact

No security impacts have been identified for this COTS product.

7.6.6 Licensing Impact

There are no license impacts with this COTS product. Product is a freeware product provided by Sybase.

7.6.7 External Drivers

No external drivers have been identified for this COTS product.

7.6.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

7.6.9 COTS Installation Sequence/Dependencies

Installation should occur prior to upgrade of Sybase ASE 12.5.

7.7 Sybase Central 4.0

7.7.1 Description of COTS

Sybase Central is a tool that database administrators can use to manage and monitor all *Adaptive Server Enterprise* releases as well as Replication Server installations on the network, regardless of the platforms on which they are running.

Some of the unique benefits of using Sybase Central are described below:

- Visual representation of objects. The tree view in the Sybase Central main window expands to show each database, login, device, remote server, named cache, engine group, execution class, role, and current process in each ASE. Each database expands to show objects such as tables, stored procedures, views, rules, and users.
- Management of multiple servers from one console. From the Sybase Central main window, administrators can manage all Adaptive Server and SQL Server 11.0.x replication servers installed on the network.
- Code editor. Authorized administrators can display, edit, and print code for stored procedures, triggers, and views. The code editor performs syntax highlighting, language-sensitive indenting, and drag-and-drop editing.
- User account management. Logins and roles are manageable objects in Sybase Central. A tab on the login property sheet shows a login's currently assigned permissions on tables, stored procedures, and views.
- Ability to view the status of all parts of a replication system.
- Information about a system is gathered automatically from system tables and configuration files.

7.7.2 Rationale for Upgrade

End of support is the primary upgrade driver.

7.7.2.1 Vendor Support

Current version is at end of support.

7.7.2.2 NCRs

No NCRs are identified in association with this COTS product.

7.7.7.3 Features/Performance Upgrades

A plug-in module for Replication Server is available for Replication Server 12.01.

7.7.7.4 Cross Software Product Compatibility

Sybase Central bundled with Sybase ASE 12.0 does not support Sybase ASE 12.5. There is currently a bug against current version that would cause incompatibility with ASE versions prior to 12.5. Bug ID is 241724. This issue is being worked and is planned to be incorporated into future EBFs, allowing support for previous ASE versions. This issue will be continue to be tracked.

7.7.7.5 Operating System Compatibility

Sybase Central is no longer supported on Windows 95. It is supported on Win98, NT, and Windows 2000. Sybase Central is used exclusively by DDM and DBA Administrators at the DAACs in the M&O PC environment. Sybase Central will be targeted for delivery to the DBA Administrators on the M&O LAN whose Operating Systems are baselined at Windows 98 or higher.

7.7.7.6 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product.

7.7.8 Operational Impact

Other than downtime identified in the PSR, no additional operational impact is expected.

7.7.9 Custom Code Impact

There are no identified custom code impacts associated with this COTS product.

7.7.10 Security Impact

No security impacts have been identified for this COTS product.

7.7.11 Licensing Impact

There are no licensing issues with this software. License keys are required and will be discussed in the PSR document.

7.7.12 External Drivers

No external drivers have been identified for this COTS product.

7.7.13 Other Impacts/Comments

No other impacts have been identified for this COTS product.

7.7.14 COTS Installation Sequence/Dependencies

Product should be installed prior to installation of Sybase ASE 12.5.

7.8 DDTS 4.7

7.8.1 Description of COTS

The Clear Distributed Defect Tracking System (ClearDDTS) is a change request management COTS application which:

- provides the capability to electronically compose, submit, report, and track the status of ECS configuration change requests (CCR)
- provides the capability to electronically compose, submit, report, and track the status of ECS non-conformance reports (NCR)
- has a web interface which facilitates access to and modification of change request information directly from a web browser (new capability)

7.8.2 Rationale for Upgrade

Version 4.1 is at end of life and end of support. Version does not support Solaris 8. A new version is needed to migrate the CM Server to Solaris 8.

7.8.2.1 Vendor Support

Vendor end of life and end of support and Solaris 8 support are the primary upgrade drivers. At one time vendor had indicated that product might be dropped. However, vendor has recently identified that development work with the product is continuing, with version 4.8 planned for release next year.

7.8.2.2 NCRs

No NCRs are outstanding for this COTS product.

7.8.2.3 Features/Performance Upgrades

No additional performance or features are expected with this upgrade.

7.8.2.4 Cross Software Product Compatibility

There are no software compatibility issues associated with this upgrade.

7.8.2.5 Operating System Compatibility

Version planned for upgrade is compatible with Solaris 2.5.1 and Solaris 8. The CM Server host, on which DDTS resides at the DAACs, will be retained at Solaris 2.5.1 until the XRP-II product

is ready to be replaced. Upgrade may occur while still at Solaris 2.5.1 or may occur after the CM Server is upgraded to Solaris 8.

7.8.2.6 Hardware Product Compatibility

There are no hardware compatibility issues associated with this upgrade.

7.8.3 Operational Impact

No operational impacts have been identified.

7.8.4 Custom Code Impact

There are no custom code impacts identified for this upgrade.

7.8.5 Security Impact

No security impacts have been identified for this COTS product.

7.8.6 Licensing Impact

License keys are required for this COTS product. Procedures to obtain/install the license keys will be included with the PSR.

7.8.7 External Drivers

Planned migration of XRP-II to Remedy requires that the CM Server, on which both XRP-II and DDTS reside, will remain at Solaris 2.5.1 during the Solaris 8 transition. Upgrade to Solaris 8 will occur when XRP-II to Remedy migration is completed. DDTS upgrade may occur while at Solaris 2.5.1 or wait until Solaris 8 upgrade has occurred.

7.8.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

7.8.9 COTS Installation Sequence/Dependencies

No installation sequence or other dependencies have been identified with this COTS product.

7.9 XRP-II Migration to Remedy

XRP-II is a product with significant risks for end of contract turnover. XRP-II is a customized COTS product that does not provide regular upgrades under a standard maintenance contract. Additional fees are required for upgrades such as for new operating system versions, normally covered by standard maintenance. Additionally, the database in use by the XRP-II vendor has been at end of support by the database vendor (Unify) for over two years. Major updates, not covered by existing maintenance, would be needed to mitigate risk.

To mitigate the long term risk of support under the current A migration of both Baseline Manager (BLM) and Inventory Logistics Manager (ILM) functionality to Remedy is planned.

The Architect's Office is working on development of Remedy BML and ILM tickets. The development work for the XRP-II migration to Remedy is currently planned to begin 11/2002.

The XRP-II resides on the CM Server. Current plans are that the CM Server will remain at Solaris 2.5.1 during the Solaris 8 Transition to continue to support the current version of XRP-II until an alternative implementation is identified.

7.10 End of Contract Maintenance Upgrades

7.10.1 Description of COTS

The following COTS products are expected to reach end of life and/or end of support before or near the current end of contract (10/31/2002). Working on the formula:

If end of life/end of support date + number of months needed to upgrade < End of Contract date, an upgrade will be scheduled. The COTS in this group include:

- Netscape Communicator
- ClearCase

Some additional COTS products may also require upgrades. These may include COTS products whose end of life and end of support policies are not well defined or those whose end of life and end of support dates are driven by vendor releases, and are therefore more difficult to identify more than a year in advance.

COTS upgrades that impact custom code and require recompile and redelivery custom code have not been planned for upgrade because of the identified June 2002 custom code delivery cut-off.

7.10.2 Rationale for Upgrade

Table 7-6 identifies the COTS products and the upgrade rationale.

Table 7-6. End of Contract Maintenance Upgrades

COTS Product	Upgrade Rationale
Netscape Communicator	Expected end of support before end of contract.
ClearCase	End of Support for 4.1 has been identified by the vendor as 11/01/2002.

7.10.2.1 Vendor Support

Vendor support is not an issue for this upgrade.

7.10.2.2 NCRs

No NCRs are outstanding for this COTS product.

7.10.2.3 Features/Performance Upgrades

No additional performance or features are expected with this upgrade.

7.10.2.4 Cross Software Product Compatibility

There are no software compatibility issues associated with this upgrade.

7.10.2.5 Operating System Compatibility

There are no planned operating system upgrades that will impact operating system compatibility.

7.10.2.6 Hardware Product Compatibility

There are no hardware compatibility issues associated with this upgrade.

7.10.3 Operational Impact

No operational impacts have been identified.

7.10.4 Custom Code Impact

There are no custom code impacts identified for this upgrade.

7.10.5 Security Impact

No security impacts have been identified for this COTS product.

7.10.6 Licensing Impact

License keys are required for these COTS products. Procedures to obtain/install the license keys will be included with the PSR.

7.10.7 External Drivers

No external drivers have been identified for this COTS product.

7.10.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

7.10.9 COTS Installation Sequence/Dependencies

No installation sequence or other dependencies have been identified with this COTS product.

7.11 Patch/EBF Upgrades Based on Historical Patterns

7.11.1 Description of COTS

Some COTS products have a historical pattern of requiring patches or emergency bug fixes (EBF) on a consistent basis. These are generally high impact complex COTS products. Upgrades for the following COTS products are expected based on this historical pattern over the length of the contract.

- Sybase ASE EBF upgrade
- Sybase Open Client EBF upgrade

- IRIX 6.5.x patch delivery

7.11.2 Rationale for Upgrade

Major products, such as Operating Systems and Database Products, have historically required patch upgrades or Emergency Bug Fixes (EBFs) every 6 to 12 months. While not all patches or EBFs are needed, some are identified as offering significant risk mitigation. When these are identified, either through vendor notices and alerts or as fixes to NCRs in the EDF, EBF and patch upgrades will be scheduled.

7.11.3 Vendor Support

Use of vendor patches and EBFs to mitigate risk is part of the COTS upgrade process.

7.11.4 NCRs

The need for patches or EBFs may be identified in an NCR.

7.11.5 Features/Performance Upgrades

Performance or features enhancement may be part of patch or EBF upgrade.

7.11.5.1 Cross Software Product Compatibility

Software compatibility issues will be reviewed before proceeding with this upgrade.

7.11.5.2 Operating System Compatibility

Operating System compatibility will be reviewed before proceeding with this upgrade.

7.11.5.3 Hardware Product Compatibility

Hardware compatibility will be reviewed before proceeding with this upgrade.

7.11.6 Operational Impact

Operational impacts will be reviewed before proceeding with this upgrade..

7.11.7 Custom Code Impact

Custom code impacts will be reviewed before proceeding with identified patch or EBF upgrade.

7.11.8 Security Impact

Security impacts will be reviewed before proceeding with this upgrade.

7.11.9 Licensing Impact

License impacts will be reviewed before proceeding with this upgrade..

7.11.10 External Drivers

External drivers will be reviewed before proceeding with this upgrade..

7.11.11 Other Impacts/Comments

Other impacts will be reviewed before proceeding with this upgrade.

7.11.12 COTS Installation Sequence/Dependencies

Installation sequence or other dependencies will be reviewed before proceeding with this upgrade.

7.12 Brio Report 6.2 (SQR)

Brio Report is not currently in use within ECS. Therefore this COTS product will not be upgraded until after the Solaris 8 Transition is completed. No operational impacts are expected with a Post-Solaris upgrade of this product.

7.12.1 Description of COTS

Brio Report (formerly SQR) is a report creation tool that allows users to create formatted report production. It has a report creation language that is a dynamic generation of SQL. Some of the key features are:

- Integrated Schema Browser – which allows viewing database structures and contents
- A procedural programming language for creating simple and complex report
- Full control over database transactions

7.12.2 Rationale for Upgrade

The current baseline version of SQR is 4.3.4. This version is not certified for Solaris 8, is at end of support and is not certified to support the planned Post-Solaris upgrade to Sybase Open Client 12. Upgrade is driven by these three factors.

7.12.2.1 Vendor Support

Since the previous delivery of SQR 4.3.4, the product has been acquired by Brio Technologies and renamed Brio Report. Brio has indicated that version 4.3.4 is at end of support. Brio will release version 6.2 in January 2002. This version will be used for upgrade. Certification for current and planned Operating System and Database version upgrades were also needed. Version 6.2 supports Solaris 8 and OpenClient 12/12.5 on Solaris 8.

7.12.2.2 NCRs

No NCRs are outstanding for this COTS product.

7.12.2.3 Features/Performance Upgrades

Brio Report 6.2 provides a GUI interface, which previous versions did not. This will enable current product to meet all level 3 and 4 requirements for a Report Writer. A GUI interface is currently required.

7.12.2.4 Cross Software Product Compatibility

Version 6.2 of Brio Report supports Solaris 8 and OpenClient 12/12.5 on Solaris 8.

7.12.2.5 Operating System Compatibility

Product is certified by the vendor for Solaris 8 compatibility only and therefore may not be backward compatible with Solaris 2.5.1. Delivery intended for Solaris 8 only.

7.12.2.6 Hardware Product Compatibility

There are no hardware compatibility issues associated with this upgrade.

7.12.3 Operational Impact

No operational impacts have been identified other than the installation downtime as identified in the COTS product PSR and the Solaris 8 Transition PSR.

7.12.4 Custom Code Impact

There are no custom code impacts identified for this upgrade.

7.12.5 Security Impact

No security impacts have been identified for this COTS product.

7.12.6 Licensing Impact

License keys are required for this COTS product. Procedures to obtain/install the license keys will be included with the PSR.

7.12.7 External Drivers

No external drivers have been identified for this COTS product.

7.12.8 Other Impacts/Comments

No other impacts have been identified for this COTS product.

7.12.9 COTS Installation Sequence/Dependencies

No installation sequence or other dependencies have been identified with this COTS product.

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8. COTS Hardware Upgrades

This section identifies the planned COTS hardware additions and upgrade through October 2002. An ESD received from the government after the submission of this document may alter this plan. Any firmware upgrades are not considered in this section.

Hardware COTS upgrades are performed in accordance with the Work Instructions SE-1-019-1, which details the work required from design, through procurement to the receipt of the COTS product. Once this process is complete, a CCR is created for installation and submitted to the CCB for review in accordance with the CM-1-004-1. The COTS hardware upgrades are reviewed with the DAAC at the weekly M&O CCB before approval. If actions are required to complete the CCR, these actions are assigned to the DAAC and reviewed by the CCB.

Individual hardware failures are tracked by a Maintenance Work Order (MWO). Identification of operational problems, related to performance and functionality are tracked through the COTS software NCR process.

8.1 Archive Additions

8.1.1 Description of COTS

ECS has several types of archive storage devices, including 9940 drives and TP9400 RAID devices. Additional devices are needed for DAAC Archive Implementations.

8.1.2 Rationale for Upgrade

There is one additional hardware purchase for a GSFC silo with 4 9940 drives from MOD 114. Two additional SGI Origin 2000 servers and TP9400 RAID's will be purchased, one for the new silo and one for an existing silo. An additional media purchase will be needed to complete the capacity requirements at each DAAC. These procurements will occur in Fiscal Year 2002. The silo will be driven by an SGI Origin class server and will have RAID for amasscache and buffer.

8.1.2.1 Hardware/Software Product Compatibility

The TP9400 RAID requires a more recent patch or "dot release" of the SGI IRIX Operating System. This may have potential impact on the AMASS COTS products. AMASS is currently baselined at version 5.0. Pre-ship Reviews are in progress for AMASS 5.1.1. However, AMASS is not certified for all 6.5.x versions. Refer to Section 8.1.3, Software Impact (COTS/Custom) for a discussion of possible software compatibility issues related to AMASS version certification.

8.1.2.2 Equipment End of Life/End of Support

There are no equipment end of life/end of support issues associated with these upgrades.

8.1.2.3 Features/Performance Upgrades

TP9400 has a higher performance rating than other available SGI RAID implementations.

8.1.3 Software Impact (COTS/Custom)

The new RAID will require an updated IRIX Operating System patch or “dot release”. ADIC certifies AMASS 5.1.1 on IRIX through 6.5.11. The IRIX patch or “dot release” being considered currently is 6.5.14. SGI, based on its binary compatibility mandates, maintains that software certified at one minor release, i.e., 6.5.6, should run correctly on any IRIX 6.5.x release. Some vendors have limited certification testing to a smaller range of “dot releases” or patch upgrade versions, others such as Sybase, certify for 6.5.x, as recommended by SGI. Additional information on the SGI binary compatibility mandate may be obtained at:

http://techpubs.sgi.com/library/dynaweb_bin/eht-bin/0650/nph-infosrch.cgi/infosrchtpl/SGI_Developer/mandate_IRIX/@InfoSearch_BookTextView/8

This issue will be monitored during IRIX Operating System patch upgrade testing, if it is decided to proceed with this upgrade. Upgrades will be planned if necessary.

8.1.4 Network Impacts

The new hosts will need to be added to the network. Network baseline documentation is being drafted for submission to the CCB.

8.1.5 DAAC Facility Impacts

Power and floor space are needed for the new silo, servers, and RAIDs.

8.1.6 Transition Impacts

No transition impacts are expected.

8.1.7 External Drivers

No external drivers have been identified.

8.1.8 Other Impacts/Comments

No other impacts have been identified.

8.1.9 COTS Installation Sequence/Dependencies

No other dependencies have been identified.

8.1.10 Replacement Matrix

Table 8-1 provides the replacement matrix information related to Archive Additions.

Table 8-1. Archive Additions Replacement Matrix

Functional Name	Hostname	Pre-transition Configuration	Post-transition Configuration	Action
FSMS Server 4	g0drg04	None	8 CPUs, 4 GB mem	New install
FSMS RAID 4	g0drg04	None	60x18 cache & buffer	New install
Archive Silo 5	g0drg05	None	Four 9940 drives	New install
FSMS Server 5	g0drg05	None	8 CPUs, 4 GB mem	New install
FSMS RAID 5	g0drg05	None	60x18 cache & buffer	New install
ACSLs controller 5	g0drs05	None	1 CPU, 256 MB mem	New install

8.2 Firewall Implementation

8.2.1 Description of COTS

The firewall proposal has been approved. The Portus systems for the firewall have been procured. The installation in the Performance Verification Lab (PVC) for integration, verification, and test occurred on July 13, 2001. The DAAC/SMC firewall installation is targeted to be completed during the first quarter of 2002.

8.2.2 Rationale for Upgrade

Improved security as identified in NASA Security Direction 1028.

8.2.2.1 Hardware/Software Product Compatibility

Hardware/Software products included in the implementation are compatible and support existing and planned network requirements. The following COTS software products will be delivered with the Fire Wall implementation:

- Portus 4.0
- IBM AIX 4.3.3
- eBorder Server

8.2.2.2 Equipment End-of-Life/End-of-Support

No end-of-life or end-of-support issues are applicable to this implementation.

8.2.2.3 Features/Performance Upgrades

Improved security features are the primary driver for the firewall implementation.

8.2.3 Software Impact (COTS/Custom)

In order to support custom software, the eBorder libraries and clients for both SGI and Sun were procured and will be delivered with the custom code.

8.2.4 Network Impacts

The network impacts are being worked by the Firewall Implementation Team.

8.2.5 DAAC Facility Impacts

The DAAC facility impacts are being worked by the Firewall Implementation Team.

8.2.6 Transition Impacts

Firewall Transition Impacts are being worked by the Firewall Implementation Team..

8.2.7 External Drivers

Checkpoint firewall compatibility at USGS is an external drivers that been identified for the Firewall Implementation. This issue is currently being worked by the Firewall Implementation Team.

8.2.8 Other Impacts/Comments

No other impacts have been identified for the Firewall Implementation.

8.2.9 COTS Installation Sequence/Dependencies

No other dependencies have been identified for this replacement besides those identified in the Firewall Implementation.

8.2.10 Replacement Matrix

Table 8-2 provides replacement matrix information related to the Firewall Implementation.

Table 8-2. Firewall Replacement Matrix

Functional Name	Hostname	Pre-transition Configuration	Post-transition Configuration	Action
Firewall 1	g0fwi09	None	Portus Firewall	New Install
Firewall 1	e0fwi09	None	Portus Firewall	New Install
Firewall 1	l0fwi09	None	Portus Firewall	New Install
Firewall 1	n0fwi09	None	Portus Firewall	New Install
Firewall 1	m0fwi09	None	Portus Firewall	New Install

8.3 AIRS Processing and Archive

8.3.1 Description of COTS

The Origin 3800 for Science Processing g0spg11 has 20 500 MHz CPUs for AIRS processing and 12 400 MHz CPUs for OPS and a two terabyte TP9400 RAID.

8.3.1.1 Hardware/Software Product Compatibility

AIRS processing supports a minimum OS level of IRIX 6.5.13.

8.3.1.2 Equipment End-of-Life/End-of-Support

There are no end-of-life/end-of-support issues associated with this upgrade.

8.3.1.3 Features/Performance Upgrades

This is a new requirement via ESD 107 that will be met by this upgrade.

8.3.2 Software Impact (COTS/Custom)

Object libraries are different between the operating systems and will produce different output. The compilers may need to be upgraded provide uniform output between JPL and GDAAC. An IRIX “dot release” or patch upgrade is being considered. Upgrade of the SGI compilers to version 7.3.1.2 is planned for the Solaris 8 Transition. PSR for this upgrade may be moved forward if needed to resolve this issue.

8.3.3 Network Impacts

Connections will be needed on the production and HiPPI networks.

8.3.4 DAAC Facility Impacts

The RAID will co-exist in the G0SPG10 TP9400 RAID so additional power and floor space will not be required.

8.3.5 Transition Impacts

Upgrade is not associated with any transition or other COTS upgrade.

8.3.6 External Drivers

No external drivers have been identified.

8.3.7 Other Impacts/Comments

No other impacts have been identified with this upgrade.

8.3.8 COTS Installation Sequence/Dependencies

There are no identified installation sequence or dependencies that are related to this upgrade.

8.3.9 Replacement Matrix

Table 8-3 provides detailed information on the related to the AIRS Processing and Archive Replacements.

Table 8-3. AIRS Processing and Archive Replacement Matrix

Functional Name	Hostname	Pre-transition Configuration	Post-transition Configuration	Action
TP9400 RAID	G0spg11	None	40x73GB RAID 5	New install

8.4 Solaris 8 Hardware Upgrades

8.4.1 Description of COTS

Planning for the Solaris 8 upgrades is in progress. Transition to Solaris 8 requires upgrades and replacements of SUN hardware in the ECS baseline.

Due to the increased size of the Solaris 8 Operating System, all of the existing 1GB and 2GB default boot disks will be replaced with at least a 4GB drive. Additionally, upgrades will be performed on all machines with less than 128MB of memory. Selected platforms will be replaced as required by usage.

This topic will continue to be tracked and reported at the Solaris 8 Release Manager's weekly meeting (Mondays from 2 to 3) and worked by Hardware Engineering.

8.4.2 Rationale for Upgrade

Upgrades and/or replacements of some Sun machines are needed for Solaris 8 and the Solaris 8 Transition, which has been initiated because of end of life and end of support issues related to the Solaris operating system and COTS products dependencies on this operating system.

8.4.2.1 Hardware/Software Product Compatibility

Solaris 8 will run on all existing ECS Sun hosts. Some upgrades/replacements will be necessary to standardize root disk installs and to accommodate requirements for some COTS products. Refer to Section 5.1 Solaris 8 Operating System Upgrade for additional information on the Solaris 8 operating system upgrade.

8.4.2.2 Equipment End-of-Life/End-of-Support

Some SPARCstations are at end of support. All SPARCstations at the DAACs and for M&O will be replaced in the Solaris 8 Transition. Refer to Table 8-4 for additional information.

8.4.2.3 Features/Performance Upgrades

New features and performance improvements are expected with Solaris 8 upgrades.

8.4.3 Software Impact (COTS/Custom)

There will be significant COTS/Custom code impact with the Solaris 8 Transition. Appropriate versions of all COTS products for Solaris have been identified and are being installed in the Functionality Lab String 3, PVC String 2 and VATC. When appropriate, some COTS products are planned to be replaced or removed prior to the Solaris 8 Transition. These COTS products are discussed in detail in Section 6 COTS Software Removals.

Appropriate versions of all development-related COTS products and freeware have been identified and installed in the development organization. While some issues are being worked, several Subsystem Builds have been completed for both Solaris and IRIX.

COTS and COTS Development Software for Solaris 8 is discussed in detail in throughout Section 5 of this document and specifically in Section 0, 5.1 Solaris 8 Operating System Upgrade, and the tables provided in this section.

8.4.4 Network Impacts

The network impacts will be identified in the Solaris 8 Transition Plan.

8.4.5 DAAC Facility Impacts

The DAAC facility impacts will be identified in the Solaris 8 Transition Plan.

8.4.6 Transition Impacts

The Solaris 8 Transition Plan will provide information on operational impacts.

8.4.7 External Drivers

COTS end of life and end of support for Solaris 2.5.1 by Sun and third-party COTS product vendors is the primary driver for the Solaris 8 Transition. Most COTS product vendors no longer support Solaris 2.5.1 in their most current versions.

8.4.8 Other Impacts/Comments

No other impacts have been identified for the Solaris 8 Transition.

8.4.9 COTS Installation Sequence/Dependencies

COTS installation and sequence dependencies will be addressed in the Solaris 8 Transition Plan.

8.4.10 Replacement Matrix

The hardware replacement matrices for Solaris are provided in Appendix C on a per DAAC basis.

8.5 Dashboard/Data Pool MSS20 Hardware Upgrades

8.5.1 Description of COTS

Dashboard Web Server and Data Pool Web/Java Server are planned to be supported on xxmss20 hosts at the DAACs. A hardware upgrade of these hosts is planned to support these functions.

8.5.1.1 Hardware/Software Product Compatibility

Hardware upgrade requires Solaris 8 Operating System and upgrade will be planned during or after Solaris 8 upgrade. Also see following sections for additional details.

8.5.1.2 Equipment End-of-Life/End-of-Support

There are no equipment end-of-life/end-of-support issues associated with this hardware upgrade.

8.5.1.3 Features/Performance Upgrades

High performance, multi-platform shared file system will be provided.

8.5.2.2 Software Impact (COTS/Custom)

No impacts to COTS or custom software is expected from this upgrade.

8.5.2 Network Impacts

The Sun E450 and the 9176 Disk Controller will need to be networked. Three (3) IP addresses needed.

8.5.3 DAAC Facility Impacts

DAACs have been provided with all facility requirements for this installation. Waiting for conformation on the power installation at all DAACs.

8.5.4 Transition Impacts

None—new installation.

8.5.5 External Drivers

No external drivers have been identified.

8.5.6 Other Impacts/Comments

StorEdge Volume Manager will be bundled and installed with the hardware upgrade. StorEdge Volume Manager is a COTS product that is addressed by current and planned PSRs.

8.5.7 COTS Installation Sequence/Dependencies

No other dependencies have been identified for this installation.

8.5.8 Replacement Matrix

Table 8-4 provides replacement matrix information related to the hardware upgrade for mss20.

Table 8-4. Dashboard/Datapool mss20 Hardware Upgrade (1 of 2)

Functional Name	Hostname	Pre-transition Configuration	Post-transition Configuration	Action
Dashboard/ Data Pool	g0mss21	2x168	2x333 MHz CPUs	Move 2x168 CPUs to g0mss20 Install 2x333 CPU
Dashboard/ Data Pool	g0mss20	2x168, no RAID	4x168, 100GB RAID	Add 2x168 CPUs Add RAID
Dashboard/ Data Pool	e0mss21	2x168	2x333 MHz CPUs	Move 2x168 CPUs to g0mss20 Install 2x333 CPU
Dashboard/ Data Pool	e0mss20	2x168, no RAID	4x168, 100GB RAID	Add 2x168 CPUs Add RAID

Table 8-4. Dashboard/Datapool mss20 Hardware Upgrade (2 of 2)

Functional Name	Hostname	Pre-transition Configuration	Post-transition Configuration	Action
Dashboard/ Data Pool	l0mss21	2x168	2x333 MHz CPUs	Move 2x168 CPUs to g0mss20 Install 2x333 CPU
Dashboard/ Data Pool	l0mss20	2x168, no RAID	4x168, 100GB RAID	Add 2x168 CPUs Add RAID
Dashboard/ Data Pool	n0mss21	2x168	2x333 MHz CPUs	Move 2x168 CPUs to g0mss20 Install 2x333 CPU
Dashboard/ Data Pool	n0mss20	2x168, no RAID	4x168, 100GB RAID	Add 2x168 CPUs Add RAID
Dashboard/ Data Pool	p0mss21	2x168	2x333 MHz CPUs	Move 2x168 CPUs to g0mss20 Install 2x333 CPU
Dashboard/ Data Pool	p0mss20	2x168, no RAID	4x168, 100GB RAID	Add 2x168 CPUs Add RAID

8.6 Science Working Group on Data (SWG D)

8.6.1 Description of COTS

The final recommendation proposes additional hardware for the CERES, MISR, MODIS, and MOPPITT instruments to include the following hardware:

- Additional staging disk on the DAAC unique system “l0dus01” for MOPPIT input data
- Additional CPUs and disk storage on the science processor “l0spg10” for MISR production and reprocessing, and additional 9940 drives in FSMS silo to support the archiving of the processed data.
- Additional disk space for the PDR server and tape drives in the archive to handle the MODIS product volume.
- Additional reprocessing capability for MISR and disk storage to allow MODIS to store Launch +5.

8.6.1 Rationale for Upgrade

SWG D made a recommendation for augmentation of EOSDIS processing to the Earth Science Data and Information System Project at Goddard Space Flight Center (GSFC) in March of 2001. The recommendation included hardware augmentation related to science data processing, including the processing per se, ingest, data caching, and archive access.

8.6.2 Hardware/Software Product Compatibility

The TP9400 RAID has been purchased to add additional disk storage for the SGI systems. The TP9400 RAID requires a minimum OS level of IRIX 6.5.9 to load the RAID management tool. The FSMS servers are currently using IRIX 6.5.6 due to AMASS considerations. The Clariion RAID, compatible with the FSMS servers, is out of production and very expensive to purchase. To minimize the expense, disks will be traded from g0spg10 and g0mog01 to create the additional cache spaces for amass. A two terabyte TP9400 RAID will be added to g0spg10 and a nine terabyte RAID will be added to g0mog01.

The Science Processors are currently using IRIX 6.5.9 and will only need to have the new RAID management tool and TP9400 hardware patches added to the system. This software upgrade is discussed in section 0, 4.16 SGI TP9400 RAID Software Upgrade.

The PDR server is currently using IRIX 6.5.14 and will need an upgrade to IRIX 6.5.15 only if LUNs greater than one terabyte are required on the RAID. This is considered a patch and not a major upgrade.

All work has been completed except for the redeployment of the RAID on g0spg10 and g0mog01. This will be completed when the science team certifies the new hardware.

8.6.2.1 Equipment End-of-Life/End-of-Support

No equipment end-of-life and/or end-of-support issues are identified with this implementation.

8.6.2.2 Features/Performance Upgrades

The TP9400 RAID supports disks up to 181 GB on fiber channel controllers rated up to 400MB/Sec.

Each additional 9940 drive allows up to 10MB/Sec of data transfer rate.

Each TP9400 RAID has a network connection for remote management and for use in a SAN. No other network impacts have been identified with this implementation.

8.6.3 DAAC Facility Impacts

Additional floor space and power are required to support the hardware.

8.6.4 Transition Impacts

No transition impacts have been identified for this implementation.

8.6.5 External Drivers

Terra production slowdown could cost the user communities to loose funding.

8.6.6 Other Impacts/Comments

No other impacts have been identified with this implementation.

8.6.7 COTS Installation Sequence/Dependencies

IRIX 6.5.15 will be needed on the PDR server if LUNs greater than one terabyte are requested.

The TPSSM7 software and the TP9400 RAID patches will be needed on any system with IRIX 6.5.9. The patches will not be needed if the OS is greater than 6.5.11.

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Appendix A. CUT (COTS Upgrade Team) Status Table

Some fields in Table A-1 have been deleted from this example to accommodate printing limitations.

Table A-1. CUT Matrix Weekly Update Example

Product Name	B/LV ersion n	Planned Upgrade Version	Dev. Kick- off	Turnover to Test Date	Turnover to M&O date	PSR Date	Custom Code Impact	COTS POC	Installation Comments	Status (Date) as of 01/16/2002 (unless otherwise noted)
COTS planned to be delivered prior to 6X release										
NTP (Network Time Protocol) Server for Sun	N/A	NTP 4.0	N/A	TBD	TBD	Est. 03/2002	None	Byron Peters	TBD	11/28/2001: Delay of delivery of NTP PSR and removal of DCE until after 6A_05 custom code. DCE Time Services planned for use with 6A_05 code. Delivery targeted for March 2002.
DCE Removal Technical Directive	N/A	N/A	N/A	N/A	N/A	Est. 03/2002	None	Darryl Washingt on	TBD	11/28/2001: Delay of delivery of NTP PSR and removal of DCE until after 6A_05 custom code. DCE Time Services planned for use with 6A_05 code. Delivery targeted for March 2002.
Sybase Open Client 11.1.1 with EBF 9798 for Solaris 2.5.1	11.1. 1	11.1.1 (EBF 9798)	10/31/200 1	11/15/2001	12/11/2001	01/10/2002	None	Peter MacHarrie/Carol Lindsey		PSR completed on 01/10/2002

Product Name	B/LV ersion n	Planned Upgrade Version	Dev. Kick- off	Turnover to Test Date	Turnover to M&O date	PSR Date	Custom Code Impact	COTS POC	Installation Comments	Status (Date) as of 01/16/2002 (unless otherwise noted)
SGI RAID software: TPSSM7 (Total Performance Storage System Manager 7)	N/A	TBD	08/01/2001	08/27/2001	TBD	TBD	None	Sarah Lewallen	IRIX 6.5.9 upgrade will be made to identified hosts that are not at 6.5.9 currently. No other dependencies.	DAAC Walkthrough scheduled for 01/02/2002.
ECS Upgrades related to Data Pools										
Data Pool Web and Java Services	n/a	Apache 1.3.22/Tomcat 3.2.3/velocity 1.1/jdom 1.0beta7(SGI&Sun)/webglis 3.2.1/jdbc api 2.0	10/22/2001	10/22/2001 12/03/2001	01/16/2002	01/30/2002	Data Pool Custom Code	Alex Schuster/ Kathy Carr	RTSC working on install instructions. Data Pool group on test reports.	DAAC Walkthrough scheduled for 01/29/2001. PSR scheduled for 01/30/2001.
COTS planned to be delivered prior to 6P Release										
AMASS	5	5.1.1	09/17/2001	10/30/2001 11/21/2001	12/18/2001	TBD	None	Linwood Moses	Install when PSR is completed. No other COTS or custom code dependencies.	DAAC Installation Walkthrough scheduled for 01/15/2002
WhatsUp Gold	n/a	7.0	TBD	TBD	TBD	TBD	None	Gary Gavigan	Install when PSR is completed. No other COTS or custom code dependencies.	12/19/2001: Version 7 is targeted for PSR.

Product Name	B/LV ersion	Planned Upgrade Version	Dev. Kick- off	Turnover to Test Date	Turnover to M&O date	PSR Date	Custom Code Impact	COTS POC	Installation Comments	Status (Date) as of 01/16/2002 (unless otherwise noted)
SGI BDS	2.1p0	2.3	10/01/2001	10/12/2001	TBD	TBD	None	Darryl Washingt on	Install when PSR is completed. No other COTS or custom code dependencies.	01/09/2002: Upgrade in planning.
SGI IRIX Patch bundle for 6.5.14	6.5.6/ 6.5.9	6.5.14	01/10/2002	TBD	TBD	TBD	None	Jim Mather/Indrani Dey		Fasttrack upgrade will target acg, icg and spg hosts for phase 1 upgrade. A second version planned to upgrade drg and dig hosts.
ClearCase	3.2.1	4.1	02/04/2002	03/19/2002	04/05/2002	04/19/2002	None	Stanley Stewart	Install when PSR is completed. No other COTS or custom code dependencies.	12/12/2001: CCR 01-0909 submitted and approved 12/12/2001 to upgrade remaining EDF ClearCase hosts. Installation instructions will be captured to use for PSR delivery to the DAACs. Upgrades will need to be scheduled so as not to impact delivery of 6A_05 Custom Code. Work on the 4.1 PSR will follow these upgrades.
Tivoli Distributed Monitor and Software Distributio n	3.6	3.6.2	07/05/2001	09/19/2001 11/01/2001	10/10/2001 12/13/2001	10/17/2001 01/25/2002		Alex Schuster	Install when PSR is completed. No other COTS or custom code dependencies.	12/19/2001: Internal Walkthrough completed 12/17/2001. Awaiting red-line updates and DAAC Walkthrough/PSR to be scheduled.

Product Name	B/LV ersion	Planned Upgrade Version	Dev. Kick- off	Turnover to Test Date	Turnover to M&O date	PSR Date	Custom Code Impact	COTS POC	Installation Comments	Status (Date) as of 01/16/2002 (unless otherwise noted)
SQS (Spacial Query Server)	3.2.2	3.4.2	01/03/2002	04/01/2002	04/12/2002	04/30/2002	None	Peter MacHarri e/Harold Colglazie r	Install when PSR is completed. No other COTS or custom code dependencies.	12/05/2001: Version 3.4.2 was received 11/29/2001 (7 copies).
Exabyte Driver	1.3	None available	N/A	N/A	N/A	N/A	None	Darryl Washingt on	N/A	12/19/2001: RTSC has reported that testing indicates Exabyte Driver functions correctly with all by Sun 450s. CUT Team reviewing options on reconfiguring in EDF to avoid utilizing 450s for this function or using ReelRobot software.
StorEdge Volume Manager	2.6	3.0.4	08/14/2001	TBD	TBD	TBD	None	Sarah Lewallen	Install when PSR is completed. No other COTS or custom code dependencies.	01/09/2002: Awaiting RTSC verification of installation instructions.
Solaris 8 Only COTS - will be posted but not implemented until Solaris 8 transition.										
COTS to be delivered with Solaris 8 Operating System PSR.										
Solaris	2.5.1	Solaris 8 Update 07/01	10/08/2001	02/11/2002	04/01/2002	05/13/2002	None directly - new compiler s/COTS cause impact	Alex Schuster/ Kevin Lange/R oyal White	Install as identified in Solaris 8 Release Plan. Currently Network Services, DiskSuite, GnuZip/Unzip, Traceroute, bind, NTP and Top will be delivered with Solaris 8 OS PSR.	10/03/2001: RTSC working with Sun on what is installed from CDs when "upgrade" is indicated. Some inconsistencies identified when not going from OS releases in order, i.e., Solaris 2.5.1 to 2.6 to 2.7 to 2.8.

Product Name	B/LV ersion	Planned Upgrade Version	Dev. Kick- off	Turnover to Test Date	Turnover to M&O date	PSR Date	Custom Code Impact	COTS POC	Installation Comments	Status (Date) as of 01/16/2002 (unless otherwise noted)
JetAdmin for Solaris	D.02. 13/2. 3.3	HP Jet Direct E.10.18	10/08/2001	03/25/2002	04/11/2002	05/13/2002	None	Alex Schuster	N/A - Replacement Planned	10/03/2001: HP Print Services for UNIX will be utilized: JetDirect E.10.18
Tripwire on Sun	1.3.1	1.3.1 (Solaris 8 binaries)	10/08/2001	01/17/2002	02/08/2002	02/15/2002	None	Mel Hudson	Install when PSR is completed. No other COTS or custom code dependencies	11/28/2001: IDG Cell testing completed. CCR being submitted for Functionality Lab String 3 installation and testing.
Secure Shell/TCP Wrappers	(1.3.7 & 2.4)/7 .6	(1.3.11 & 2.4)/7.6 (Solaris 8 binaries)	10/08/2001	02/01/2002	02/24/2002	03/22/2002	None	Mel Hudson	Install as identified in Solaris 8 Release Plan.	11/28/2001: IDG Cell testing completed. CCR being submitted for Functionality Lab String 3 installation and testing.
Solaris 8 Automounted COTS PSR Bundle										
PERL for Solaris 8 & IRIX 6.5	5.005 -03	5.6.1	07/16/2001	01/16/2002	02/13/2002	02/20/2002	TBD	Linwood Moses	Install as identified in Solaris 8 Automounted COTS PSR	12/12/2001: CCR submitted 12/12/2001 to build and install PERL 5.6.1 for IRIX.
TCL/tk for Solaris 8 & IRIX 6.5	8.0 patch 4	8.3.3	07/05/2001	09/13/2001 12/07/2001	10/03/2001 02/01/2002	02/08/2002	Custom Code Installs	Derrick Clark	Install as identified in Solaris 8 Automounted COTS PSR	08/29/2001: Development Peer Review for the Tcl-Tk PSR Netscape PSR held on 08/27/2001.
GhostView	1.5	1.5 (Solaris 8 Binary)	01/18/2002	03/26/2002	04/10/2002	04/23/2002	None	Alex Schuster	Install as identified in Solaris 8 Automounted COTS PSR	09/05/2001: Needs to be planned.
Netscape Communic ator for Solaris 8 w/ Java 1.3.1_01	4.7	4.78	09/12/2001	01/11/2002	03/20/2002	03/27/2002	None	Debra Davis	Install as identified in Solaris 8 Automounted COTS PSR	11/07/2001: Java Plug-in (1.3.1_01) will be included with Netscape Communicator for INS01

Product Name	B/LV ersion	Planned Upgrade Version	Dev. Kick- off	Turnover to Test Date	Turnover to M&O date	PSR Date	Custom Code Impact	COTS POC	Installation Comments	Status (Date) as of 01/16/2002 (unless otherwise noted)
Java Plug-in										
Sybase Open Client	11.1.1	12.0 for Sun EBF TBD	07/31/2001	12/09/2001 01/17/2002	02/01/2002	02/08/2002	Most Sun code	Peter macHarrie/Carol Lindsey	Install as identified in Solaris 8 Automounted COTS PSR	08/29/2001: EBF # 9763 released 8/27/2001 for Solaris. EBF being reviewed.
FIND_DD OS	3.3	4.2	09/10/2001	12/03/2001	10/02/2001 03/05/2002	10/09/2001 03/12/2002		Mel Hudson	Install as identified in Solaris 8 Automounted COTS PSR	11/28/2001: IDG Cell testing completed. CCR being submitted for Functionality Lab String 3 installation and testing.
Purify	5.3	5.3	N/A	N/A	N/A	N/A	None	Kevin Lange/Ron Best	Install as identified in Solaris 8 Automounted COTS PSR	01/09/2002: Development is reviewing if upgrade to version 2002 is needed. ScienceDataServer is experiencing some problems with 5.3 version.
Acrobat Reader for Solaris/SGI/PC	3.0/2.1	4.05 Solaris (5.0 PC ?)	10/01/2001	01/31/2002	02/21/2002	02/28/2002	None	Alex Schuster	Install when PSR is completed. No other COTS or custom code dependencies.	10/03/2001: Upgrade to version 5.0 not available for Solaris or SGI as of 10/03/2001.
Solaris 8 Web Services COTS PSR Bundle										
Apache Server	1.3.19	1.3.22	01/16/2002	03/01/2002	03/27/2002	04/03/2002	Data Pool	Chris Innes	Installation will only target xxMSS20.	10/17/2001: DataPools version of 1.3.22 will be utilized.
Tomcat	3.2.1	3.2.3	01/15/2002	03/01/2002	04/02/2002	04/09/2002	Data Pool	Chris Innes	Installation will only target xxMSS20.	10/17/2001: DataPools version of 3.2.3 will be utilized.
mod_ssl	2.7.1-1.3.14	2.8.5-1.3.22	01/15/2002	03/11/2002	04/17/2002	04/24/2002	Dashboard	Natisha Greenway	Installation will only target xxMSS20.	12/05/2001: Solaris 8 version upgrade will target version 2.8.5-1.3.22 for compatibility with Apache 1.3.22 delivered for Data Pool.

Product Name	B/LV ersion	Planned Upgrade Version	Dev. Kick- off	Turnover to Test Date	Turnover to M&O date	PSR Date	Custom Code Impact	COTS POC	Installation Comments	Status (Date) as of 01/16/2002 (unless otherwise noted)
OpenSSL	0.9.x	0.9.6c	01/15/2002	03/04/2002	03/28/2002	04/10/2002	Dashboard	Natisha Greenway	Installation will only target xxMSS20.	10/17/2001: Being planned.
MM	1.1.3	1.1.3	01/15/2002	03/02/2002	03/26/2002	04/10/2002	Dashboard	Natisha Greenway	Installation will only target xxMSS20.	10/17/2001: Being planned.
velocity	1.1	1.1	01/17/2002	02/18/2002	03/13/2002	03/26/2002	Data Pool	Chris Innes	Installation will only target xxMSS20.	10/17/2001: Being planned.
jdom	1.0beta7	1.0beta7 or GA	01/15/2002	03/13/2002	04/09/2002	04/26/2002	Data Pool	Danny Huang	Installation will only target xxMSS20.	10/17/2001: Being planned.
jdbc API	2.0	2.0	01/15/2002	03/21/2002	04/16/2002	04/30/2002	Data Pool	Danny Huang	Installation will only target xxMSS20.	10/17/2001: Being planned.
webglis	TBD	TBD	01/15/2002	03/29/2002	04/18/2002	04/25/2002	Data Pool	Donna Copeland	Installation will only target xxMSS20.	10/17/2001: Being planned.
Solaris 8 Individual COTS product PSRs										
Netscape Enterprise Server (iPlanet Web Server, Enterprise Edition) for Solaris 8	3.6	6.0	09/12/2001	01/18/2002	03/22/2002	03/27/2002	Yes (EcMsTt MSSSR VR)	Alex Schuster	Install as identified in Solaris 8 Release Plan.	12/12/2001: Installed and configured in Functionality Lab String 3
FLEXIm for Sun/SGI	6.1	8.0d	12/10/2001	01/25/2002	02/20/2002	02/27/2002	None	Alex Schuster	Install when PSR is completed. No other COTS or custom code dependencies.	12/12/2001: Draft PSR document started.

Product Name	B/LV ersion	Planned Upgrade Version	Dev. Kick- off	Turnover to Test Date	Turnover to M&O date	PSR Date	Custom Code Impact	COTS POC	Installation Comments	Status (Date) as of 01/16/2002 (unless otherwise noted)
Forte Workshop Compilers (C, C++ & FORTRAN 77/90)	Visual Workshop 3.1/FOR TRAN7 7 4.2	6.1 (6 update1) with Sun patch 109508- 03	08/22/2001	12/21/2001	01/22/2002	TBD	None	Alex Schuster	Install as identified in Solaris 8 Release Plan.	12/12/2001: Awaiting for automount decision and associated install instructions. FORTRAN90 Compilers need to be delivered for e0acs05, e0acs06, g0acs03, l0acs03, n0acs04, p0acs03, and t1acs03
jre	1.2.1 for Data Pool/ JDT & 1.3 for Dash board	1.3.1_01 for Sun/1.3.1 for SGI	07/05/2001	01/14/2002	02/04/2002	02/21/2002	None	Alex Schuster	Install as identified in Solaris 8 Release Plan.	CCR drafted for installation on Solaris 8 and IRIX 6.5.x
Crack	4.1	5.0	09/10/2001	01/23/2002	02/05/2002	02/12/2002	None	Mel Hudson	Install as identified in Solaris 8 Release Plan.	Crack will be delivered for Solaris.
Remedy	3.2.1	4.5.2 Server w/patch 1092/4.5. 1 UserTool w/patch #1084/4.5 .2 AdminToo l on NT w/patch 1093	10/01/2001	04/02/2002	04/26/2002	05/03/2002	None	Alex Schuster	Install as identified in Solaris 8 Transition Plan. AdminTool targeted for PDS QA Server (NT)	12/12/2001: Remedy 4.5.2 is currently installed in IDG Cell; Completing configuration and start testing planned for this week.

Product Name	B/LV ersion	Planned Upgrade Version	Dev. Kick- off	Turnover to Test Date	Turnover to M&O date	PSR Date	Custom Code Impact	COTS POC	Installation Comments	Status (Date) as of 01/16/2002 (unless otherwise noted)
SGI MIPSpro Compilers/ProDev for RogueWave Upgrades	7.2.1.3m/2.7	7.3.1.2/2.8.1 w/SGI patches 4239 & 4273	01/07/2002	01/24/2002	01/30/2002	02/26/2002	None	Prashant Acharya	Install when PSR is completed. No other COTS or custom code dependencies.	06/20/2001: SGI patches 4239 & 4273 may be needed for ProDev 2.8.1
Forcheck	12.30	12.83	01/03/2002	03/10/2002	04/16/2002	04/29/2002	None	I. Chughta	Install when PSR is completed. No other COTS or custom code dependencies.	09/26/2001: Responsible Engineer assigned. In planning phase.
Anlpassword Replacement	TBD	TBD	TBD	TBD	TBD	TBD	None	Byron Peters	TBD	10/24/2001: Product replacement procurement has been approved. Two products will be evaluated: Tivoli SecureWay and CA's Etrust. Evaluation planning is in progress. CA's eTrust has been installed for initial evaluation.
Sendmail Commercial	8.8.8 + freeware	1.2.2	01/18/2002	03/19/2002	04/22/2002	04/29/2002	None	Byron Peters	Install as identified in Solaris 8 Transition Plan.	01/09/2002: Software has been procured and has arrived. PSR POC needs to be identified.
IDL for PC/SGI/Sun	5.1 (Sun)/5.3 (SGI)/5.3.1 (PC)	5.5	12/05/2001	01/09/2002	02/04/2002	02/11/2002	EcDpAt CheckHdfFile on Sun/Toolkit on SGI\	Alex Schuster	Install on specific operating system as identified in Solaris 8 Release Plan.	12/12/2001: Completed IDG Cell installation on a Sun 12/11/2001; was installed on SGI .
Post-Solaris										

Product Name	B/LV ersion	Planned Upgrade Version	Dev. Kick- off	Turnover to Test Date	Turnover to M&O date	PSR Date	Custom Code Impact	COTS POC	Installation Comments	Status (Date) as of 01/16/2002 (unless otherwise noted)
Upgrades										
StorEdge Volume Manager	3.0.4	3.2.2	02/04/2002	02/28/2002	03/19/2002	04/01/2002	None	Sarah Lewallen	This PSR should be installed as soon as the Solaris 8 Transition is stabilized and no more roll back is needed.	12/05/2001: Upgrade in planning.
Sybase ASE	11.9. 2 (Sun) /11.9. 3 (SGI)	12.5 (except Autosys Server:12. 0)	01/16/2002	04/15/2002	07/11/2002	07/22/2002	None	Peter MacHarri e	Install Autosys patches prior to installation of 12.0 on the Autosys Server.	11/28/2001: With feedback from Systems Engineering, it was decided to upgrade all Sybase ASE servers to 12.5, except Autosys Server. Autosys 3.5 does not support ASE 12.5. Autosys does not have version available currently to support 12.5.
Sybase Central	3.0	4.0 (bundled with ASE 12.5)	01/16/2002	04/15/2002	07/11/2002	07/22/2002	None	Peter MacHarri e	Upgrade of Win95 OS or migration to alternative NT host required prior to install.	08/15/2001: Sybase Central bundled with 12.0 is not compatible with Sybase ASE 12.5. The version bundled with ASE 12.5 is currently not compatible with earlier versions, because of bug. Bug 241724 is being worked / issue will continue to be tracked. Sybase Central 12.5 support for Win95 also being tracked.
Sybase Replicatio n Server	11.5. 1	12.1	01/28/2002	03/18/2002	03/28/2002	04/24/2002	None	Peter MacHarri e	TBD	10/17/2001: To be planned

Product Name	B/LV ersion	Planned Upgrade Version	Dev. Kick- off	Turnover to Test Date	Turnover to M&O date	PSR Date	Custom Code Impact	COTS POC	Installation Comments	Status (Date) as of 01/16/2002 (unless otherwise noted)
jConnect	5.2	5.5	03/25/2002	04/25/2002	TBD	TBD	None	Peter MacHarrie	Upgrade prior to installation and use of Sybase ASE 12.5	10/17/2001: To be planned
Tivoli Client & Server	3.6.3/ 3.6.2	Framework 3.7.1 TEC 3.7 SW.Dist. 4.1 Distr. Mon. 3.7	04/01/2002	05/22/2002	06/13/2002	06/20/2002	None	Alex Schuster	Install as identified in Solaris 8 Release Plan.	08/08/2001: Current planned as a Post-Solaris Upgrade
Autosys product patch for Sybase 12.0/Solaris 8	No product patches	LO80396 (patches LO91470/ L0819690 & LI82921 ?)	02/15/2002	03/11/2002	04/17/2002	05/01/2002	None	Alex Schuster	Patch is needed with Sybase ASE 12.0 delivery.	11/28/2001: Patch applies to 3.5 with Sybase ASE 12.0 on Solaris 8 only. Additional patches LO91470/L0819690 (Sybase incremental patches) & LI82921 (Daylight Savings Changes) should also be considered for delivery.
SQR (Brio Report)	4.3.4	6.2	08/09/2002	09/04/2002	10/07/2002	10/18/2002	None	Carol Lindsey	Install when PSR is completed. No other COTS or custom code dependencies.	Planned for Post-Solaris 8 delivery. No production use of product currently, therefore there will be no impact to retaining an incompatible version.
COTS to be retained at 2.5.1 until upgrade implementation is available.										
XRP- II/ACCELL DBMS	3.1.3	TBD	TBD	TBD	TBD	TBD	None	Alex Schuster	Install as identified in Solaris 8 Release Plan.	12/12/2001: AO is drafting BLM and ILM tickets for Post-Solaris 8 migration. Current version will continue to run on Solaris 2.5.1 until migration version completed.

Product Name	B/LV ersion	Planned Upgrade Version	Dev. Kick- off	Turnover to Test Date	Turnover to M&O date	PSR Date	Custom Code Impact	COTS POC	Installation Comments	Status (Date) as of 01/16/2002 (unless otherwise noted)
Possible upgrades in 01/01/2001 Rolling Wave - not currently planned or scheduled.										
Netscape Communic ator	4.78	6.2 or later	TBD	TBD	TBD	TBD	None	Danny Huang	TBD	11/28/2001: The most recent stable version will be targeted for upgrade.
ClearCase	4.1	5.0 (2002)	TBD	TBD	TBD	TBD	None	Stanley Stewart	TBD	11/28/2001: Version 2002 for Solaris was released 11/16/2002. Release of version for SGI targeted for 02/2002.
DDTS	4.1	4.7	04/09/2002	05/14/2002	05/14/2002	TBD	None	Natisha Greenwa y	TBD	11/28/2001: Version 4.7 due to be released 12/2001.
JNDI	TBD	TBD	TBD	TBD	TBD	TBD	None	Alex Schuster	TBD	10/17/2001: TBD. Being considered for Solaris 8
Web Application Server	n/a	6.0	TBD	TBD	TBD	TBD	TBD	Alex Schuster	TBD	10/17/2001: If utilized, procurement will be needed.
turbine	n/a	TBD	TBD	TBD	TBD	TBD	TBD	Alex Schuster	TBD	10/17/2001: TBD. Being considered for Solaris 8
IRIX Patch Bundle	6.5.x	6.5.x patches	TBD	TBD	TBD	TBD	None	Alex Schuster	TBD	06/20/2001: Patches are recommended for inclusion in next patch bundle for risk mitigation as part of COTS Alert Process.

Product Name	B/LV ersion	Planned Upgrade Version	Dev. Kick- off	Turnover to Test Date	Turnover to M&O date	PSR Date	Custom Code Impact	COTS POC	Installation Comments	Status (Date) as of 01/16/2002 (unless otherwise noted)
Remedy Replacem ent of XRP-II	3.1.3	Remedy 4.5.2	TBD	TBD	TBD	TBD	None	Alex Schuster	TBD	11/28/2001: BOE for replacement of XRP is under review.
Sybase ASE 12.0/12.5 EBF	12.0/ 12.5	12.0 EBF/12.5 EBF	TBD	TBD	TBD	TBD	TBD	Peter Macharrie		11/28/2001: Historical pattern indicates that an EBF upgrade will be needed.
Sybase Open Client 12.0 EBF	12.0	12.0 EBF	TBD	TBD	TBD	TBD	TBD	Peter Macharrie		11/28/2001: Historical pattern indicates that an EBF upgrade will be needed.

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Appendix B. COTS Compatibility Matrix

Table B-1. Targeted Solaris 8 Baseline As Generated from Compatibility Matrix

Product	Depl.	Current B/L	Solaris 8 B/L	Availability _Date	Release	Rationale	Org.	PSR Delivery	Solaris_Done
Acrobat Reader for Solaris	OPS	3	4.05	Current	S8	Support for new formats. Version will be supported on Solaris 8.	Dev. COTS	Automounted COTS PSR	
ACSLs	OPS	6.0.1	6.0.1	Current	S8	No upgrade currently planned	MS ITP	ACSLs PSR	12/11/2001
Anlpassword	OPS	2.3	Replacement: TBD	TBD	Dependent on replacement product	Corruption problem with Anlpassword. Two products being evaluated as replacement in Security Proposal 2810.	Security Group	Anlpassword Replacement PSR	
Apache Web Server	Data Pool/Dashboard	1.3.22	1.3.22	Current	S8	Recompile for Solaris 8 compatibility/Dashboard & DataPools will use this version	Dashboard	WebService PSR Bundle	
AutoSys Remote Agent for SGI	OPS	3.5	3.5	Current	6X	No additional upgrade planned.	Dev. COTS	Autosys PSR	07/24/2001
AutoSys Remote Agent for Sun	OPS	3.5	3.5	Current	6X	Vendor Support/Solaris 8 & Sybase ASE compatibility.	Dev. COTS	Autosys PSR	07/24/2001
AutoSys Server	OPS	3.5	3.5	Current	6X	Vendor Support/Solaris 8 & Sybase ASE compatibility.	Dev. COTS	Autosys PSR	07/24/2001
AutoSys Xpert	OPS	3.5	3.5	Current	6X	Vendor Support/Solaris 8 & Sybase ASE compatibility.	Dev. COTS	Autosys PSR	07/24/2001
bind	OPS	4.9.3	Solaris 8 0701 bundled version	Current	S8	Solaris 8 07/01 bundled version	Dev. COTS	Solaris 8 OS Bundle PSR	

Table B-1. Targeted Solaris 8 Baseline As Generated from Compatibility Matrix (2 of 9)

Product	Depl.	Current B/L	Solaris 8 B/L	Availability _Date	Release	Rationale	Org.	PSR Delivery	Solaris_Done
BuilderXcessory	DEV	5.03	5.08	Current	Dev. Only	Required for Solaris 8 Motif compatibility - Motif version change in Solaris 8.	Dev. COTS	Dev. Only - No PSR	Installed in DEV: To be delivered with S8 custom code
BuilderXcessory Epak/GraphPak	DEV	3	3.0.4	Current	Dev. Only	Required for Solaris 8 Motif compatibility - Motif version change in Solaris 8.	Dev. COTS	Dev. Only - No PSR	Installed in DEV: To be delivered with S8 custom code
ClearCase	OPS	3.2.1	4.1	Current	S8	Version 3.2.1 at End-of-life. 4.1 required to support Solaris 8 build environment. Vendor has identified 4.1 will also support IRIX 6.5.2 and beyond.	CM	ClearCase PSR	
Crack	OPS	4.1	5	Current	S8	Recompile needed for Solaris 8	Security Group	Crack PSR or Linux Security Delivery	
DBTools.h++/CT.lib	DEV	3.1.4	4.2.2	Current	Dev. Only	Required for Rogue Wave & Solaris 8 compatibility.	DDM	Dev. Only - No PSR	Installed in DEV: To be delivered with S8 custom code
DDTS	OPS	4.1	4.1 on Solaris 2.5.1	Current	Removal	Planned replacement by Remedy	Dev. COTS	No PSR Planned for Solaris 8	N/A - will remain on Solaris 2.5.1
Disksuite	OPS	4.1	4.2.1	Current	S8	Upgrade needed for Solaris 8 compatibility; primarily for EDF	Dev. COTS	Solaris 8 OS Bundle PSR	
e-Border Dev. Toolkit & Static Libraries for Solaris 2.5.1	DEV	1.4	1.4 (new binary)	Current	Dev. Only	Required for Solaris 8 Compatibility	Development	Dev. Only - No PSR	Dev. Only - No PSR
e-Border Sun Driver (Client)	DEV	3.05	3.05 (new binary)	Current	6X & S8	Sockets support compatible with firewall implementation	Development	Dev. Only - No PSR	Dev. Only - No PSR
Exabyte Driver	OPS	1.3	1.3 or replacement	N/A	Verify binary or replace	8mm tape driver freeware product unsupported. No Solaris 8 support or upgrade available. Need to verify binary compatibility or seek replacement	MS ITP	No PSR Planned for Solaris 8	

FIND_DDOS	OPS	3.3	4.2	Current	S8	Binary version for Solaris 8 needs to be identified and/or tested	Security Group	Automounted COTS PSR	
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Table B-1. Targeted Solaris 8 Baseline As Generated from Compatibility Matrix (3 of 9)

Product	Depl.	Current B/L	Solaris 8 B/L	Availability _Date	Release	Rationale	Org.	PSR Delivery	Solaris_Done
FLEXIm	OPS	6.1	8.0d	Current	S8	Upgrade will be required for Solaris 8 compilers. Upgrade to the latest version for Sun/SGI planned.	Dev. COTS	FLEXIm PSR	
Forcheck	OPS	12.3	12.83	Current	6X	End of Support 12/31/2001. Version will be supported on Solaris 8	Dev. COTS	Forcheck PSR	
Forte for Java	DEV	3.0 Community Edition	3.0 Community Edition	Current	Dev. Only	Community Edition (freeware) in use in Development	Dev. COTS	Dev. Only - No PSR	Dev. Only - No PSR
GhostView	OPS	1.5	1.5 (new binary)	N/A	S8	Recompile for Solaris 8 compatibility	Dev. COTS	Automounted COTS PSR	
GNU Unzip	OPS	1.2.4	1.2.4	N/A	S8	Same version bundled with Solaris 8. Will be delivered with OS.	SED-HW	Solaris 8 OS Bundle PSR	
GNU Zip	OPS	1.2.4	1.2.4	N/A	S8	Same version bundled with Solaris 8. Will be delivered with OS.	SED-HW	Solaris 8 OS Bundle PSR	
HDF Libraries	DEV	4.1r3	5-1.4.1 & 4.1r5	Current	Dev. Only	Series 4 current version continued; Version 5-1.4.1 to be added.	Dev. COTS	Dev. Only - No PSR	Installed in DEV: To be delivered with S8 custom code
IDL for SGI	OPS	5.3	5.5	Current	S8	End of support for 5.1 and 5.3 versions/Sun version requires greater than 2.5.1	Dev. COTS	IDL PSR	
IDL for Solaris	OPS	5.1	5.5	Current	S8	End of support for 5.1 and 5.3 versions/Sun version requires greater than 2.5.1	Dev. COTS	IDL PSR	
Java SDK for SGI	DEV	1.2.2+	1.3.1	Current	S8	Development Tool for Java at delivered jre version	Dev. COTS	Dev. Only - No PSR	Dev. Only - No PSR
Java SDK for Sun	DEV	1.2.1	1.3.1_01	Current	Dev. Only	Development Tool for Java at delivered jre version	Dev. COTS	Dev. Only - No PSR	Dev. Only - No PSR

Product	Depl.	Current B/L	Solaris 8 B/L	Availability _Date	Release	Rationale	Org.	PSR Delivery	Solaris_Done
jConnect for Solaris	Data Pool/Dashboard	5.2 (EBF9747)	5.2 EBF 9747	Current	6X	Delivery needed for Solaris for DataPools; EBF to be included.	Data Pool	Automounted COTS PSR	12/18/2001

Table B-1. Targeted Solaris 8 Baseline As Generated from Compatibility Matrix (4 of 9)

Product	Depl.	Current B/L	Solaris 8 B/L	Availability _Date	Release	Rationale	Org.	PSR Delivery	Solaris_Done
JDBC API	Data Pool	2	2	Current	S8	Recompile for Solaris 8	Data Pool	WebService PSR Bundle	
JDOM for Solaris	Data Pool	1.0beta7	1.0beta7 (new binary)	Current	S8	Recompile required/Upgrade TBD/Required for DataPools	Data Pool	WebService PSR Bundle	
JetAdmin for Sun	OPS	d.02.10	JetDirect E.10.18	Current	S8	Support for JetAdmin at end-of life; will be at end of support at upgrade. Need upgrade for Solaris 8 support.	Dev. COTS	Solaris 8 OS Bundle PSR	X
JNI C Controller for Fiber Channel Host Bus Adapter	Data Pool	4	4	Current	6X on Solaris 8	Support for Data Pools; Initial Delivery will be on Solaris 8	Data Pool	Synergy Metadata Server PSRs	12/14/2001
Jprobe Server Side Suite	DEV	2.5	3.0.1	Current	Dev. Only	TBD if needed for development	Dev. COTS	Dev. Only - No PSR	Dev. Only - No PSR
JRE for IRIX	OPS	1.2.2/1.3	1.3.1	Current	N/A	Consistent jre versions on SGI for BMGT and PDS/Data Pool	SDSRV COTS	JRE PSR	
JRE for Solaris	OPS	1.2.1	1.3.1_01	Current	S8	Required for Solaris 8 compatibility	Dev. COTS	JRE PSR	
JRE plug-in for Sun	OPS	1.2.1	1.3.1_01	Current	S8	Added for JDT usage; compatible version with jre version	Dev. COTS	iPlanet Web Server PSR	
Legato Networker Client	OPS	6.0.2	6.0.2	Current	6X	Active support for IRIX 6.5.9m & support for future OS upgrades. End-of-life est. for current version: 09/2001.	Dev. COTS	Legato Networker PSR	08/14/2001
Legato Networker Server	OPS	6.0.2	6.0.2	Current	6X	Active support for IRIX 6.5.9m & support for future OS upgrades. End-of-life est. for current version: 09/2001.	Dev. COTS	Legato Networker PSR	08/14/2001

Table B-1. Targeted Solaris 8 Baseline As Generated from Compatibility Matrix (5 of 9)

Product	Depl.	Current B/L	Solaris 8 B/L	Availability _Date	Release	Rationale	Org.	PSR Delivery	Solaris_Done
MM	Dashboard	1.1.3	1.1.3 (new binary)	Current	S8	Turnover with Dashboard Phase 3	Dashboard	WebService PSR Bundle	
mod_ssl	Dashboard	2.7.1-1.3.14	2.8.5-1.3.22	Current	S8	Upgrade for compatibility with planned Apache 1.3.19 version	Dashboard	WebService PSR Bundle	
NCDware	OPS	5.1.140	5.1.140	Current	6X	Vendor Support and Solaris 8 support.	Dev. COTS	NCDWare PSR	08/02/2001
Netscape Communicator	OPS	4.7	4.78	Current	S8	Most current bug fixes/stable version; 6.0 buggy; 6.1 in beta	Dev. COTS	Automounted COTS PSR	
Netscape Enterprise Server	OPS	3.6	6	Current	S8	Vendor Support : 3.6 series End-of-Life 6/2000.	Dev. COTS	iPlanet Web Server PSR	
NTP (Network Time Protocol) Server	OPS	1	Solaris 8 bundled version	Current	S8	Time synchronization mechanism is needed with removal of DCE Time Services. Need Solaris 8 compatible version	SED-HW	Solaris 8 OS Bundle PSR	
OpenSSL	Dashboard	0.9.x	0.9.6c	Current	S8	Recompile for Solaris 8.	Dashboard	WebService PSR Bundle	
PERL	OPS	5.005-03	5.6.1	Current	S8	Recompile for Solaris 8/IncludeDBD; DBI 1.19; GD 1.33; Mime 2.11; PNGgraph 1.11; Sendmail 2.0; TCLtk; gd 1.8.4, jpegsrc.v6b; libpng 1.0.12, zlib 1.1.3	Dev. COTS	Automounted COTS PSR	
PopChart Image Server	Dashboard	3.8	3.8	Current	6X	Current 3.8 version is supported on Solaris 8.	Dashboard	Dashboard Phase 2 Installation	Delivered with Dashboard Phase 2
Purify	OPS	5.3	5.3	Current	6X	Solaris 8 support; bug fixes; 64-bit support	Dev. COTS	Automounted COTS PSR	07/17/2001

Product	Depl.	Current B/L	Solaris 8 B/L	Availability _Date	Release	Rationale	Org.	PSR Delivery	Solaris_Done
QFS	Data Pool	3.5.3.3	3.5.3.3	TBD	6X on Solaris 8	Support for Data Pools; Initial Delivery will be on Solaris 8	SED-HW	Synergy Metadata Server PSRs	12/14/2001
Rational Rose C++	DEV	2001a (7.5)	7.5	Current	S8	End of Support; Solaris 8 compatibility	Dev. COTS	Dev. Only - No PSR	Dev. Only - No PSR
RDAC (Redundant Disk Array Controller)	Data Pool	7.10.0G.00	7.10.0G.00	Current	6X on Solaris 8	Support for Data Pools; Initial Delivery will be on Solaris 8	Data Pool	Synergy Metadata Server PSRs	12/14/2001

Table B-1. Targeted Solaris 8 Baseline As Generated from Compatibility Matrix (6 of 9)

Product	Depl.	Current B/L	Solaris 8 B/L	Availability _Date	Release	Rationale	Org.	PSR Delivery	Solaris_Done
Remedy ARS Client	OPS	3.2.1	4.5.1 User Tool/4.5.2 Admin Tool on NT	Current	S8	End of Support; Solaris 8 compatibility	Dev. COTS	Remedy ARS PSR	
Remedy ARS Server	OPS	3.2.1	4.5.2	Current	S8	End of Support; Solaris 8 compatibility	Dev. COTS	Remedy ARS PSR	
SANergy	Data Pool	2.3.3	2.3.3	Current	6X on Solaris 8	Support for Data Pools; Initial Delivery will be on Solaris 8	SED-HW	Synergy Metadata Server PSRs	12/14/2001
sendmail	OPS	8.8.8+	1.2.2 (Commercial)	Current	S8	SAMS (Sendmail Advanced Message Server), commercial version 1.2 will replace current freeware version. Product will provide additional security features.	Security Group	Sendmail Commercial PSR	
SGI C Compiler	OPS	7.2.1.3m	7.3.1.2m	Current	S8	Consistent version with required C++ compiler upgrade.	Dev. COTS	SGI Compiler Upgrade PSR	
SGI C++ Compiler	OPS	7.2.1.3m	7.3.1.2m	Current	S8	Required for Rogue Wave & Solaris 8/SGI compatibility.	Dev. COTS	SGI Compiler Upgrade PSR	
SGI Fortran 77 Compiler	OPS	7.2.1.3m	7.3.1.2m	Current	S8	Consistent version with required C++ compiler upgrade.	Dev. COTS	SGI Compiler Upgrade PSR	
SGI Fortran 90 Compiler	OPS	7.2.1.3m	7.3.1.2m	Current	S8	Consistent version with required C++ compiler upgrade.	Dev. COTS	SGI Compiler Upgrade PSR	
SGI ProDev Workshop	OPS	2.7	2.8.1	Current	S8	Upgrade for additional features.	Dev. COTS	SGI Compiler Upgrade PSR	
Solaris	OPS	2.5.1	8 update 07/01	Current	S8	Solaris 2.5.1 is at end-of-life as of 09/2000. Sun and third-party vendors dropping support for 2.5.1 in current versions.	Dev. COTS	Solaris 8 OS Bundle PSR	

Product	Depl.	Current B/L	Solaris 8 B/L	Availability _Date	Release	Rationale	Org.	PSR Delivery	Solaris_Done
Solaris (for ACSLS)	OPS	2.6	8 update 07/01	Current	S8	Support for ACSLS 6.0. Return of DRS hosts to baselined OS.	Dev. COTS	Solaris 8 OS Bundle PSR	12/11/2001

Table B-1. Targeted Solaris 8 Baseline As Generated from Compatibility Matrix (7 of 9)

Product	Depl.	Current B/L	Solaris 8 B/L	Availability _Date	Release	Rationale	Org.	PSR Delivery	Solaris_Done
SPARCompiler C	OPS	4.2	Forte 6.1	Current	S8	Upgrade required for Solaris 8 compatibility	Dev. COTS	Dev. Only - No PSR	Dev. Only - No PSR
SPARCompiler C++	OPS	4.2	Forte 6.1	Current	S8	Upgrade required for Solaris 8 compatibility	Dev. COTS	Dev. Only - No PSR	Dev. Only - No PSR
SPARCompiler Fortran 77	OPS	4.2	Forte 6.1 f77 & f95 (w/f90 support)	Current	S8	Upgrade required for Solaris 8 compatibility	Dev. COTS	Sun Forte Compiler PSR	
ssh secure shell commercial client	OPS	2.4	2.4	Current	S8	Recompile for Solaris 8 compatibility planned.	Security Group	Solaris 8 OS Bundle PSR	
ssh secure shell commercial server	OPS	1.3.7	1.3.11	Current	S8	Recompile for Solaris 8 compatibility planned.	Security Group	Solaris 8 OS Bundle PSR	
StorEdge Volume Manager	OPS	2.6	3.0.4	Current	6X	Product at end-of-life. Latest version that will support both 2.5.1 and 8 selected to provide flexibility with transition options. Post Solaris upgrade to 3.2.2 planned.	SED-HW	StorEdge Volume Manager PSR	
Sybase ASE for Sun	OPS	11.9.2	11.9.2	Current	6X	Vendor Support/Solaris 8 Certification/Post Solaris upgrade to 12.0 planned because vendor support for 11.9.2 end 03/31/2002	DDM	Sybase 11.9.2 PSR	10/25/2001
Sybase ASE SQL Server Monitor for Sun	OPS	11.9.2	11.9.2	Current	6X	Vendor Support/Solaris 8 Certification/Post Solaris upgrade to 12.0 planned because vendor support for 11.9.2 end 03/31/2002	DDM	Sybase 11.9.2 PSR	10/25/2001
Sybase Open Client/C for Sun	OPS	11.1.1 (EBF9475)	12	Current	S8	Vendor end of support for version (04/03/2001)	DDM	Automounted COTS PSR	
Sybase Replication Server/Manager	OPS	11.5.1	11.5.1	Current	Current	Vendor Support for version on Solaris 8	DDM	No PSR Planned for Solaris 8	04/04/2000

Product	Depl.	Current B/L	Solaris 8 B/L	Availability _Date	Release	Rationale	Org.	PSR Delivery	Solaris_Done
SYMplicity Storage Manager	Data Pool	7.10.GG.02	7.10.GG.02	Current	6X on Solaris 8	Support for Data Pools; Initial Delivery will be on Solaris 8	SED-HW	Synergy Metadata Server PSRs	12/14/2001

Table B-1. Targeted Solaris 8 Baseline As Generated from Compatibility Matrix (8 of 9)

Product	Depl.	Current B/L	Solaris 8 B/L	Availability _Date	Release	Rationale	Org.	PSR Delivery	Solaris_Done
TCL/Tk	OPS	8.0 patch 4	8.3.3	Current	S8	Recompile for Solaris 8/upgrade recommended	Dev. COTS	Automounted COTS PSR	
TCPWrappers	OPS	7.6	7.6	Current	S8	Recompile for Solaris 8 compatibility/no upgrade available.	Security Group	Solaris 8 OS Bundle PSR	
Tivoli Client: Distributed Monitoring for Solaris	OPS	3.6	3.6.2	Current	6X	Upgrade required for Solaris 8 compatibility.	Dev. COTS	Tivoli DM/SD PSR	
Tivoli Client: Enterprise Console for Solaris	OPS	3.6.2	3.6.2	Current	6X	Version is Solaris 8 certified.	Dev. COTS	No PSR Planned for Solaris 8	07/10/2001
Tivoli Client: Management Framework for Solaris	OPS	3.6.3	3.6.3	Current	6X	Version is Solaris 8 certified.	Dev. COTS	No PSR Planned for Solaris 8	07/10/2001
Tivoli Client: Software Distribution for Solaris	OPS	3.6	3.6.2	Current	6X	Upgrade required for Solaris 8 compatibility.	Dev. COTS	Tivoli DM/SD PSR	
Tivoli Server: Distributed Monitoring	OPS	3.6	3.6.2	Current	6X	Upgrade required for Solaris 8 compatibility.	Dev. COTS	Tivoli DM/SD PSR	
Tivoli Server: Enterprise Console	OPS	3.6.2	3.6.2	Current	6X	Version is Solaris 8 certified.	Dev. COTS	No PSR Planned for Solaris 8	07/10/2001
Tivoli Server: Management Framework	OPS	3.6.3	3.6.3	Current	6X	Version is Solaris 8 certified.	Dev. COTS	No PSR Planned for Solaris 8	07/10/2001
Tivoli Server: Software Distribution	OPS	3.6	3.6.2	Current	6X	Upgrade required for Solaris 8 compatibility.	Dev. COTS	Tivoli DM/SD PSR	
Tomcat	Data Pool/Dashboard	3.2.3	3.2.3	Current	S8	Recompile for Solaris 8 compatibility/Dashboard & DataPools will use this version	Dashboard	WebService PSR Bundle	

Product	Depl.	Current B/L	Solaris 8 B/L	Availability _Date	Release	Rationale	Org.	PSR Delivery	Solaris_Done
Tools.h++	DEV	7.0b	8.5.0	Current Sun/08/31/2001 SGI	Dev. Only	Required for Rogue Wave & Solaris 8 compatibility.	Dev. COTS	Dev. Only - No PSR	Installed in DEV: To be delivered with S8 custom code

Table B-1. Targeted Solaris 8 Baseline As Generated from Compatibility Matrix (9 of 9)

Product	Depl.	Current B/L	Solaris 8 B/L	Availability _Date	Release	Rationale	Org.	PSR Delivery	Solaris_Done
Tools.Pro.h++	DEV	1.1.1	2.5.0	Current	Dev. Only	Required for Rogue Wave & Solaris 8 compatibility.	Dev. COTS	Dev. Only - No PSR	Installed in DEV: To be delivered with S8 custom code
Top	OPS	3.4	3.5beta12	Beta	S8	Version required for Solaris 8 compatibility	TEST/RTSC	Solaris 8 OS Bundle PSR	
Traceroute for Solaris	OPS	1.17	Solaris 8-bundled version	Current	S8	Freeware currently bundled with Solaris 8 Operating System	Dev. COTS	Solaris 8 OS Bundle PSR	
Tripwire for Solaris	OPS	1.3.1	1.3.1 (new binary)	Current	S8	Recompile needed for Solaris 8	Security Group	Solaris 8 OS Bundle PSR	
Velocity	Data Pool	1.1	1.2	Current	S8	Recompile required/Upgrade TBD	Data Pool	WebService PSR Bundle	
Visual Workshop for C++	OPS	3	Forte 6.1	Current	S8	Upgrade required for Solaris 8 compatibility	Dev. COTS	Sun Forte Compiler PSR	
Web Glis	Data Pool	3.2.1	3.2.1	Current	S8	Recompile for Solaris 8	Data Pool	WebService PSR Bundle	
XRP-II	OPS	3.1.3	3.1.3 on Solaris 2.5.1	Current	S8	New version necessary for Solaris 8	Dev. COTS	No PSR Planned for Solaris 8	N/A - will remain on Solaris 2.5.1

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Appendix C. Solaris 8 Hardware Replacement Matrices

Table C-1. EDC Solaris 8 Server Hardware Replacement Matrix

Anticipated Pre-Solaris Transition Configuration

RAID 34x9 GB	e0dis01 E4000 2 GB, 2GB 2 GB, 2GB 8x32, 8x32 168, 168	SCSI switch	e0dis02 E4000 2 GB, 2GB 2 GB, 2GB 8x32, 8x32 168, 168	RAID 8x9 GB D3 8mm Stacker	e0mss20 E3000 2x9 GB 8x32, 8x32 168, 168 8x32, 8x32 168, 168	RAID 12x36 GB	e0mss21 E3000 2x9 GB 8x128, - 336, 336	RAID 18x9 GB
e0ins01 E3000 6x9 GB 8x128, 8x32 400, 400 8x32, 8x32 400, 400	RAID 16x4 GB	e0ins02 E3000 6x9 GB 8x128, 8x32 248, 248 8x32, 8x32 248, 248	e0sps04 E4000 2 GB, 2GB 18GB, 18GB 8x32, 8x32 168, 168 8x32, 8x32 168, 168	Disk Pack 6x2 GB Disk Pack 6x2 GB	e0pls02 E4000 2 GB, 2GB 18GB, 18GB 8x32, - 168, 168 8x32, - 168, 168	Disk Pack 6x2 GB Disk Pack 6x2 GB	e0acs05 E3000 3x9 GB 8x128, - 336, 336 8x128, - 336, 336 -, - 336, 336	e0acs06 E3000 3x9 GB 8x32, 8x32 168, 168 8x32, 8x32 168, 168

Planned Final Solaris 8 Configurations

RAID 34x9 GB RAID	e0ins01 E3000 6x9 GB	SCSI switch	e0dis02 E4000 18 GB, 18GB	RAID 12x36 GB D3	e0mss30 E3000 2x9 GB	RAID 12x36 GB	e0mss31 E3000 2x9 GB	RAID 18x9 GB
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8x9 GB

8x32, 8x32
168, 168
8x32, 8x32
168, 168

8mm Stacker

8x32, 8x32
168, 168
8x32, 8x32
168, 168

8x128, -
336, 336

e0ins11
E4000
18GB, 18GB
8x128, 8x32
400, 400
8x128, 8x32
400, 400

RAID 16x4 GB

e0ins12
E4000
18 GB, 18GB
8x128, 8x32
248, 248
8x128, 8x32
248, 248

e0mss11
E3000
2x9 GB
8x32, 8x32
168, 168
8x32, 8x32
168, 168

Disk Pack 6x2 GB
Disk Pack 6x2 GB

e0pls11
E4000
18 GB, 18GB
8x32, 8x32
168, 168

Disk Pack 6x2 GB
Disk Pack 6x2 GB

e0acs06
E3000
3x9 GB
8x128, -
336, 336
8x128, -
336, 336
-, -
336, 336

e0acs05
E3000
3x9 GB

Table C-2. EDC Solaris 8 Workstation Hardware Replacement Matrix

Anticipated Pre-Solaris Transition Configuration

e0acs03	e0acs04	e0ais02	e0ais03	e0ais06	e0ass01	e0ass02	e0css02	e0dms03
Ultra 1	Sparc 20	Sparc 20	Ultra 2	Sparc 20	Ultra 1	Ultra 2	Sparc 20	Ultra 1
2x32,2x16	2x32	2x32,64	8x32	256 MB	4x32	8x16	4x64	2x32
1 x 167 MHz	1 x 50 MHz	1 x 50 MHz	1 x 200 MHz	1 x 50 MHz	1 x 167 MHz	1 x 167 MHz		1 x 167 MHz
2 GB	2 GB	1 GB	2 GB	1 GB	2 GB	2 GB	2 GB	2 GB

e0dms04	e0drs03	e0drs04	e0drs08	e0mss01	e0mss02	e0mss04	e0pls01	e0pls03
Ultra 1	Sparc 5	Sparc 5	Ultra 10	Ultra 2	Ultra 2	E3000	Sparc 20	Ultra 1
2x32,2x64	7x32	7x32	4x64	4x16,4x128	4x32	8x32, -	2x32,5x64	4x32,4x64
1 x 167 MHz	1 x 110 MHz	1 x 170 MHz	1 x 333 MHz	1 x 200 MHz	2 x 168 MHz	1 x 168 MHz	1 x 75 MHz	1 x 167 MHz
2 GB	2 GB	2 GB	9 GB	2 GB	2 GB	2 GB	1 GB	2 GB

Planned Final Solaris 8 Configurations

e0acs03	e0acs04	e0ais11	e0ais03	e0ais06	e0ass01	e0ass02	e0css02	e0dms03
Ultra 1		Ultra 2	Ultra 2		Ultra 1	Ultra 2		Ultra 1
2x128		4x16,2x128	8x32		8x32	8x32		8x32
1 x 167 MHz		1 x 200 MHz	1 x 200 MHz		1 x 167 MHz	1 x 167 MHz		1 x 167 MHz
9 GB		9 GB	9 GB		9 GB	9 GB		9 GB

2x128 from e0mss01

consolidated into e0acs03

formerly e0mss01

consolidated into e0ais11

2x32 from e0acs03 and 2x32 from e0acs04

4x64 from e0css02

consolidated into e0mss11

2x32 from e0ais02, 6x32 from e0drs03

e0dms04	e0drs03	e0drs04	e0drs08	e0mss11	e0mss02	e0mss04	e0pls01	e0pls03
Ultra 1	Ultra 10	Ultra 10	Ultra 10	E3000	Ultra 2	E3000		Ultra 1
8x32	256 MB	256 MB	256 MB	1024 MB	4x64	8x32, -		384 MB
1 x 167 MHz	1 x 440 MHz	1 x 440 MHz	1 x 333 MHz	4 x 168 MHz	2 x 168 MHz	1 x 168 MHz		1 x 167 MHz
9 GB			9 GB	6x9	9 GB	9 GB		9 GB

1x32 from e0drs03, 7x32 from e0drs04

former e0mss20

4x64 from e0pls01

consolidated into e0pls03

Table C-3. GSFC Solaris 8 Server Hardware Replacement Matrix

Anticipated Pre-Solaris Transition Configuration

RAID 19x4 GB	g0dis01 E4000 2 GB, 2GB 2 GB, 2GB 8x32, 8x32 248, 248	RAID 19x4 GB	g0dis02 E4000 2 GB, 2GB 2 GB, 2GB 8x32, 8x32 168, 168		g0mss20 E3000 2x9 GB 8x32, 8x32 168, 168 8x32, 8x32 168, 168	RAID 12x36 GB	g0mss21 E3000 2x9 GB 8x128, - 336, 336	RAID 18x9 GB
g0ins01 E3000 6x9 GB 8x32, 8x32 336, - 8x32, 8x32 336, -	RAID 18x4 GB	g0ins02 E3000 6x9 GB 8x32, 8x32 336, - 8x32, 8x32 336, -	g0sps06 E4000 18GB, 18GB 2 GB, 2 GB 8x128, - 336, 336 8x32, 8x32 336, 336	12x2 GB	g0pls02 E4000 18GB, 18GB 2 GB, 2 GB 8x32, - 168, 168 8x32, - 168, 168	14x2 GB	g0acs03 E3000 3x9 GB 8x128, - 336, 336 -, - 336, 336	g0acs04 E3000 3x9 GB 8x32, 8x32 248, 248 8x32, 8x32 248, 248

Planned Final Solaris 8 Configurations

RAID 19x4 GB	g0dis01 E4000 18 GB, 18 GB 2 GB, 2GB 8x32, 8x32 248, 248	g0dis02 E4000 2 GB, 2GB 2 GB, 2GB 8x32, - 168, 168	g0mss20 E3000 2x9 GB 8x32, 8x32 168, 168 8x32, 8x32	RAID 12x36 GB	g0mss21 E3000 2x9 GB 8x128, - 336, 336	RAID 18x9 GB
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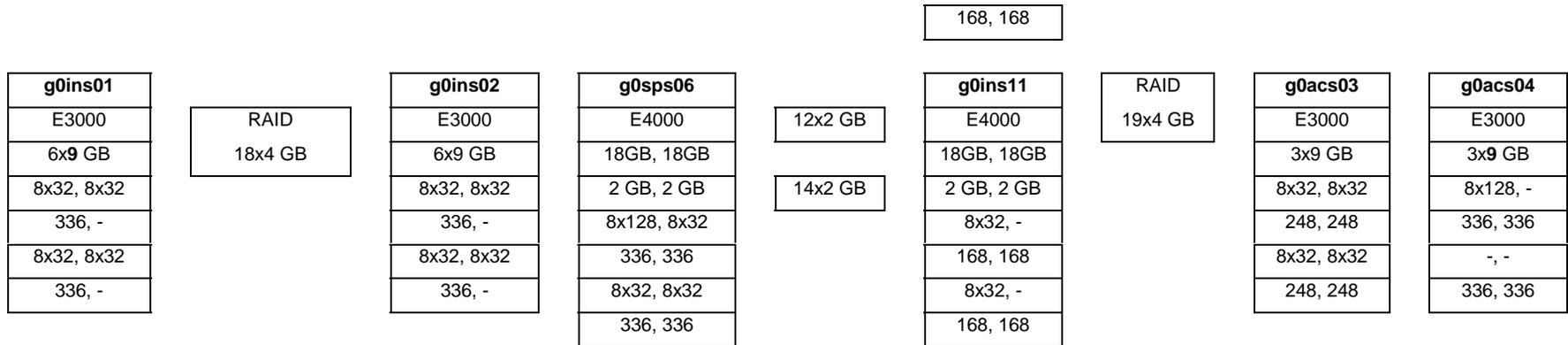


Table C-4. GSFC Solaris 8 Workstation Hardware Replacement Matrix

Anticipated Pre-Solaris Transition Configuration:

g0pls01	g0pls03	g0css02	g0ais01	g0ais05	g0ais06	g0ais07	g0ais08	g0ais09	
Ultra 2	Sparc 20	Sparc 20	Ultra 1	Sparc 20	E1000	Sparc 20	Sparc 20	Sparc 20	
4x16,4x128	2x32,5x64	4x64	4x32	2x32	1.5 GB	4x32	5x32	4x32	
1x168 MHz	1x75 MHz	2x75 MHz	1x167 MHz	1x50 MHz	4x MHz	1x50 MHz	1x50 MHz	2x75 MHz	
2 GB	2 GB	2 GB	2 GB	1 GB	TBD	1 GB	1 GB	1 GB	
g0ais10		g0ais11	g0ais12	g0mss07	g0mss02		g0mss10	g0dms03	
Sparc 20	25x2 GB	Sparc 20	Sparc 20	E3000	Ultra 2	42x9 GB	Ultra 2	Sparc 20	
256 MB	SSA	256 MB	7x32	8x32, -	4x32	SSA	4x16,4x128	2x32,5x64	
2x75 MHz		2x75 MHz	1x50 MHz	1x168 MHz	2x167 MHz		2x167 MHz	1x75 MHz	
2 GB		2 GB	2 GB	2 GB	2 GB		2 GB	2 GB	
g0dms04	g0dms05	g0acs02	g0acs03	g0acs04	g0acs06	g0drs03	g0drs04	g0drs12	g0drs15
Sparc 20	Sparc 20	Ultra 1	E3000	E3000	Sparc 20	Sparc 5	Sparc 5	Ultra 10	Ultra 10
2x32	2x32	2x32	8x128, -	4x8x32	2x32	224 MB	224 MB	134 MB	134 MB
1x50 MHz	1x50 MHz	1x167 MHz	4x333 MHz	4x333 MHz	1x50 MHz	1x110 MHz	1x110 MHz		1x333 MHz
2 GB	2 GB	2 GB	9 GB	9 GB	1 GB	2 GB	2 GB	9 GB	9 GB

Planned Final Solaris 8 Configurations

g0pls01	g0pls03	g0css02	g0ais01	g0ais05	g0ais06	g0ais07	g0ais08	g0ais09	
Blade 100	Retired	Blade 100	Blade 100	Blade 100					
512 MB	512 MB	512 MB	512 MB	256 MB		256 MB	256 MB	256 MB	
1x500 MHz		1x500 MHz	1x500 MHz	1x500 MHz					
2x15 GB		2x15 GB	2x15 GB	2x15 GB					
g0ais10		g0ais11	g0ais12	g0mss07	g0mss02		g0mss10	g0dms03	

Ultra 2	25x2 GB	Ultra 1	Blade 100	E3000	Ultra 2	42x9 GB	Ultra 2	Blade 100
4x16,4x128	SSA	4x32	512 MB	8x32, -	4x32	SSA	4x16,4x128	512 MB
1x168 MHz		1x167 MHz	1x500 MHz	1x168 MHz	2x167 MHz		2x167 MHz	1x500 MHz
9 GB		9 GB	2x15 GB	9 GB	9 GB		9 GB	2x15 GB

g0dms04	g0dms05	g0acs02	g0acs03	g0acs04	g0acs06	g0drs03	g0drs04	g0drs12	g0drs15
Blade 100	Blade 100	Ultra 1	E3000	E3000	Blade 100	Ultra 10	Ultra 10	Ultra 10	Ultra 10
256 MB	256 MB	2x32	8x128, -	4x8x32	256 MB	256 MB	256 MB	134 MB	134 MB
1x500 MHz	1x500 MHz	1x167 MHz	4x333 MHz	4x333 MHz	1x500 MHz	1x440 MHz	1x440 MHz		1x333 MHz
2x15 GB	2x15 GB	9 GB	9 GB	9 GB	2x15 GB	2x20 GB	2x20 GB	9 GB	9 GB

Table C-5. LARC Solaris 8 Server Hardware Replacement Matrix

Anticipated Pre-Solaris Transition Configuration

RAID 9x9 GB	I0dis01 E4000 2 GB, 2GB 2 GB, 2GB 8x32, 8x32 168, 168	RAID 16x4 GB	I0dis02 E4000 2 GB, 2GB 2 GB, 2GB 8x32, 8x32 168, 168		I0mss20 E3000 2x9 GB 8x32, 8x32 168, 168 8x32, 8x32 168, 168	RAID 12x36 GB	I0mss21 E3000 2x9 GB 8x128, - 336, 336	RAID 18x9 GB
I0ins01 E3000 6x9,18 GB 8x32, 8x32 168, - 8x32, 8x32 168, -	RAID 16x4 GB	I0ins02 E3000 6x9,18 GB 8x32, 8x32 336, - 8x32, 8x32 336, -	I0sps03 E3000 2x2,18 GB 8x128, 8x128 168, 168 8x32, 8x32 168, 168	6x2 GB 6x2 GB	I0pls02 E3000 2x2,18 GB 8x128, 8x128 168, 168 8x32, 8x32 168, 168	6x2 GB 6x2 GB	I0acs03 E3000 3x9,2 GB 8x128, - 336, 336 -, - 336, 336	I0acs04 E3000 3x9,2 GB 8x32, 8x32 248, 248 8x32, 8x32 248, 248

Planned Final Solaris 8 Configurations

RAID 9x9 GB	I0dis01 E4000 18 GB, 18 GB 2 GB, 2GB 8x32, 8x32 168, 168	RAID 16x4 GB	I0dis02 E4000 18 GB, 18 GB 2 GB, 2GB 8x32, 8x32 168, 168		I0mss20 E3000 2x9 GB 8x32, 8x32 168, 168 8x32, 8x32 168, 168	RAID 12x36 GB	I0mss21 E3000 2x9 GB 8x128, - 336, 336	RAID 18x9 GB
I0ins01		I0ins02		I0sps03		I0ins11	I0acs03	I0acs04

E3000
6x9,18 GB
8x32, 8x32
168, -
8x32, 8x32
168, -

RAID
16x4 GB

E3000
6x9,18 GB
8x32, 8x32
336, -
8x32, 8x32
336, -

6x2 GB
6x2 GB

E3000
2,9,18 GB
8x128, 8x128
248, 248
8x128, 8x128
248, 248

6x2 GB
6x2 GB

E3000
2,9,18 GB
8x32, 8x32
168, 168
8x32, 8x32
168, 168

E3000
9,2 GB
8x32, 8x32
168, 168
8x32, 8x32
168, 168

E3000
3x9 GB
8x128, -
336, 336
-, -
336, 336

Table C-6. LARC Solaris 8 Workstation Hardware Replacement Matrix

Anticipated Pre-Solaris Transition Configuration

I0acs01	I0acs06	I0ais01	I0ais09	I0ais10	I0css02	I0dms01	I0dms04	I0dms05
Ultra 1	Sparc 20	Ultra 1	Sparc 20	Sparc 20	Sparc 20	Ultra 1	Sparc 20	Sparc 20
64 MB	64 MB	128 MB	64 MB	384 MB	256 MB	64 MB	64 MB	128 MB
1 x 167 MHz	1 x 50 MHz	1 x 167 MHz	1 x 50 MHz	1 x 75 MHz	2 x 75 MHz	1 x 167 MHz	1 x 50 MHz	1 x 50 MHz
2 GB	2 GB	2 GB	1 GB	2 GB	2 GB	2 GB	1 GB	1 GB

I0drs02	I0drs05	I0mss01	I0mss05	I0mss10	I0pls02
Sparc 5	Ultra 10	Ultra 2	E3000	Ultra 2	Ultra 2
224 MB	256 MB	128 MB	256 MB	576 MB	576 MB
1 x 110 MHz	1 x 333 MHz	2 x 168 MHz	1 x 168 MHz	2 x 168 MHz	1 x 168 MHz
2 GB	9 GB	2 GB	2 GB	2 GB	1 GB

Planned Final Solaris 8 Configurations

I0acs01	I0acs06	I0ais01	I0ais09	I0ais10	I0css02	I0dms01	I0dms04	I0dms05
Ultra 1	Blade 100	Ultra 1	Blade 100	Blade 100	Blade 100	Ultra 1	Blade 100	Blade 100
64 MB	256 MB	128 MB	256 MB	512 MB	512 MB	64 MB	256 MB	256 MB
1 x 167 MHz	1x500 MHz	1 x 167 MHz	1x500 MHz	1x500 MHz	1x500 MHz	1 x 167 MHz	1x500 MHz	1x500 MHz
9 GB	2x15 GB	9 GB	2x15 GB	2x15 GB	2x15 GB	9 GB	2x15 GB	2x15 GB

I0drs02	I0drs05	I0mss01	I0mss05	I0mss10	I0pls02
Ultra 10	Ultra 10	Ultra 2	E3000	Ultra 2	Ultra 2
256 MB	256 MB	128 MB	256 MB	576 MB	576 MB

1x440 MHz	1 x 333 MHz	2 x 168 MHz	1 x 168 MHz	2 x 168 MHz	1 x 168 MHz
2x20 GB	9 GB	2 GB	9 GB	9 GB	9 GB

Table C-7. NSIDC Solaris 8 Server Hardware Replacement Matrix

Anticipated Pre-Solaris Transition Configuration

	<table border="1"> <tr><td>n0dis01</td></tr> <tr><td>E3000</td></tr> <tr><td>2 GB, 2GB</td></tr> <tr><td>8x32, -</td></tr> <tr><td>168, -</td></tr> </table>	n0dis01	E3000	2 GB, 2GB	8x32, -	168, -	<table border="1"> <tr><td>RAID</td></tr> <tr><td>13x2 GB</td></tr> </table>	RAID	13x2 GB	<table border="1"> <tr><td>n0dis02</td></tr> <tr><td>E3000</td></tr> <tr><td>2 GB, 2GB</td></tr> <tr><td>8x32, -</td></tr> <tr><td>168, -</td></tr> </table>	n0dis02	E3000	2 GB, 2GB	8x32, -	168, -		<table border="1"> <tr><td>n0mss20</td></tr> <tr><td>E3000</td></tr> <tr><td>2x9 GB</td></tr> <tr><td>8x32, 8x32</td></tr> <tr><td>168, 168</td></tr> <tr><td>8x32, 8x32</td></tr> <tr><td>168, 168</td></tr> </table>	n0mss20	E3000	2x9 GB	8x32, 8x32	168, 168	8x32, 8x32	168, 168	<table border="1"> <tr><td>RAID</td></tr> <tr><td>12x36 GB</td></tr> </table>	RAID	12x36 GB	<table border="1"> <tr><td>n0mss21</td></tr> <tr><td>E3000</td></tr> <tr><td>2x9 GB</td></tr> <tr><td>8x128, -</td></tr> <tr><td>336, 336</td></tr> </table>	n0mss21	E3000	2x9 GB	8x128, -	336, 336	<table border="1"> <tr><td>RAID</td></tr> <tr><td>18x9 GB</td></tr> </table>	RAID	18x9 GB																
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Planned Final Solaris 8 Configurations

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E3000
7x9,18 GB
8x32, 8x32
168, -
8x32, 8x32
168, -

RAID
11x4 GB

E3000
7x9,18 GB
8x32, 8x32
168, -
8x32, 8x32
168, -

E4000
2GB, 2GB

4x2 GB
4x2 GB

E4000
18GB, 18GB
8x32, 8x32
168, 168
8x32, 8x32
168, 168

4x2 GB
4x2 GB

E3000
2x9 GB
8x32, 8x32
248, 248
8x32, 8x32
248, 248

E3000
2, 1x9 GB
-, -
-, -
8x128, -
168, 168

Table C-8. NSIDC Solaris 8 Workstation Hardware Replacement Matrix

Anticipated Pre-Solaris Transition Configuration

n0pls02	n0pls03	n0ais01	n0mss01		n0mss02	n0mss05	n0ais05	
Ultra 2	Sparc 20	Ultra 2	Ultra 2	19x4	Ultra 2	E3000	Sparc 20	5x2 GB
4x16,4x128		4x32	4x16,4x128	16x9	4x32,4x64	8x32, -	2x32,5x64	
1x168 MHz		1x200 MHz	2x168 MHz		2x200 MHz	1x168	1x75 MHz	
2 GB		2 GB	2 GB		2 GB	2 GB	2 GB	

n0css02	n0drs03	n0dms04	n0acs03	n0acs06
Sparc 20	Sparc 5	Ultra 1	Ultra 1	Sparc 20
7x32		2x32	2x64	2x32
1x50 MHz		1x167 MHz	1x167 MHz	1x50 MHz
4 GB		2 GB	2 GB	1 GB

Planned Final Solaris 8 Configurations

	n0ais01	n0mss01		n0mss02	n0mss05	n0ais05	
	Ultra 2	Ultra 2	19x4	Ultra 2	E3000	Ultra 2	5x2 GB
	4x32	4x16,4x128	16x9	4x32,4x64	8x32, -	4x16,4x128	
	1x200 MHz	2x168 MHz		2x200 MHz	1x168	1x168 MHz	
	9 GB	9 GB		9 GB	9 GB	9 GB	

n0css02	n0drs03	n0dms04	n0acs03	n0acs06
Blade 100	Ultra 10	Ultra 1	Ultra 1	Blade 100

512 MB	256 MB	2x32	2x64	256 MB
1x500 MHz	1 x 440 MHz	1x167 MHz	1x167 MHz	1x500 MHz
2x15 GB	2x20 GB	9 GB	9 GB	2x15 GB

Table C-9. SMC Solaris 8 Workstation Hardware Replacement Matrix

Anticipated Pre-Solaris Transition Configuration

m0mss01 Ultra 2	RAID 9x2 GB	m0mss02 Ultra 2	RAID 15x4 GB RAID 15x4 GB	m0mss04 E3000	DLT Stacker	m0css02 Sparc 20	m0css03 Sparc 20	MultPack 2x9 GB
m0css04 Sparc 20	MultPack 2x9 GB	m0css05 Sparc 20	m0mss12 Sparc 20	8mm Stacker 4mm Stacker Disk Pack	m0mss17 Sparc 20	m0mss15 E3000	RAID	m0mss16 E3000

Planned Final Solaris 8 Configurations

m0mss01 Ultra 2	RAID 9x2 GB	m0mss02 Ultra 2	RAID 15x4 GB RAID 15x4 GB	m0mss04 E3000	DLT Stacker	m0css02 (removed)	m0css03 Blade 100 512 MB 1x500 MHz 2x15 GB	
9 GB		9 GB		9 GB				
m0css04		m0css05	m0mss12	8mm	m0mss17	m0mss15	RAID	m0mss16

Blade 100
512 MB
1x500 MHz
2x15 GB

Blade 100
512 MB
1x500 MHz
2x15 GB

(removed)

Stacker
4mm
Stacker

Blade 100
256 MB
1x500 MHz
2x15 GB

E3000

E3000