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EOSDIS Core System Project

ECS COTS Deployment Plan Volume 5

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Raytheon Company
Upper Marlboro, Maryland

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Preface

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Abstract

This is the fifth 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, test, COTS

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Appendix A: CUT (COTS Upgrade Team) Status Table

Appendix B: COTS Compatibility Matric

1. Introduction

1.2 Identification

This document is the ECS COTS Deployment Plan for COTS products being upgraded for the period defined for Volume 5 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 5” 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 5 includes upgrades that occur during the period July 1, 2001 through December 31, 2001. 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 6 and its coverage will begin in December 2001.

1.3 Purpose

The purpose of this plan is to provide the approach and currently available details related to the upgrading of the COTS products identified for Volume 5. This plan describes the process for identifying, developing, integrating, testing, and shipping all Volume 5 products; including but not limited to, reviewing, monitoring, and providing a status of those products.

1.4 Status and Schedule

Volume 5 of this document will be formally delivered in July 2001. 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 5.

1.5 Organization

Section 1 provides information regarding the identification, scope, purpose, and 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 currently identified COTS upgrades for the Volume 5 period. The currently 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 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 will discuss the COTS products that have been identified for removal.
Section 7	This section discusses planned Post-Solaris 8 Transition COTS upgrades.

Section 8 provides a detailed description of the COTS hardware/network upgrades that are planned to begin during the July 2001 through December 2001 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.

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
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
170-WP-024	ESD 95 Archive Study for the ECS Project (Project Sensitive – Not to be reproduced or disclosed)
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 5 of DID 335 provides information on upgrades that are scheduled or tentatively planned to be initiated during the period of 07/01/2001 through 12/31/2001. 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.

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 ECS makes to mitigate both types of risk is 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 is 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 is usually identified by the COTS product reaching 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

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.

is provided in the following sections to serve as a reference for the upgrade discussions in 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 support a certain number of versions back. The larger vendors with this type of support policy often support the most current version and the last two versions back. Some vendors support only one version back 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 these risks, 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 for maintenance of 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 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 require 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, 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 3)

COTS Product	Baseline Version	Upgrade Version	Dependencies/Installation Sequence Requirements	Criticality for Operational Support	Targeted Completion
Purify	4.5.1	5.3	None	Low	07/17/2001 (completed)
Autosys	3.4.2	3.5	Upgrade required prior to Sybase 11.9.2 upgrade. Upgrade compatible with Sybase 11.5.1 and 11.9.2.	High	07/2001 (completed)
Tripwire on Sun	1.2	1.3	None	Low	08/2001
Legato Networker	5.5.1	6.0.2	None	Medium	08//2001
Secure Shell	2.0.13	2.4	None	High	08/2001
NTP (Network Time Protocol)	N/A – new	4.099k23	Time Service for Sockets (6A_XX)/DCE Time Service replacement	High	08/2001
NCDWare	4.1.141	5.1.140	None	Low	08/2001
Dashboard Turnover to ECS	N/A	---	Turnover to ECS targeted with Dashboard Phase 3	Low	09/2001
Firewall Implementation	N/A	Portus 4.0 IBM AIX 4.3.3	Compatible hardware and software will be bundled.	High	PVC/VATC: 07/2001 GSFC/SMC: 09/2001 NSIDC: 09/2001 EDC: 10/2001 LARC 11/2001 (est.)

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

COTS Product	Baseline Version	Upgrade Version	Dependencies/Installation Sequence Requirements	Criticality for Operational Support	Targeted Completion
Sybase ASE & Sybase SQL Server Monitor	11.5.1	11.9.2.3 for Sun & 11.9.3.x for SGI	Upgrades to Autosys 3.5/Tivoli Enterprise Server Enterprise Console/Framework 3.6.3 must occur prior to Sybase ASE 11.9.2 upgrade	High	09/2001
SQS	3.2.2	3.4.1	None	Medium	09/2001
StorEdge Volume Manager	2.6	3.0.4	No COTS/Custom code dependencies or installation sequence requirements.	Low	09/2001 (est.)
ClearCase	3.2.1	4.1	No COTS/Custom code dependencies or installation sequence requirements.	Low	09/2001 (est.)
GSFC SPR Upgrades	N/A	N/A	None	Low	09/2001
Tivoli DM/SD	3.6	3.6.2	Tivoli Management Framework 3.6.3	Low	10/2001
Acrobat Reader	3.0	5.0	No COTS/Custom code dependencies or installation sequence requirements.	Low	12/2001
Forcheck	12.30	12.83	No COTS/Custom code dependencies or installation sequence requirements.	Low	06/30/2001-12/31/2001 Rolling Wave
SGI MIPSpro Compilers/Pro Dev	7.2.1.3m/2.7	7.3.1.2/2.8.1	No COTS/Custom code dependencies or installation sequence requirements.	Low	06/30/2001-12/31/2001 Rolling Wave
PDS Turnover to ECS	N/A	---	Turnover to ECS targeted with PDS Phase 4.	Low	11/2001 (est.)
SWGDT P9400 Upgrades	N/A	---	SGI RAID Software Upgrade/IRIX 6.5.9 Upgrades	Low	11/2001
SGI RAID Software Upgrade	N/A	TPSSM7	SWGDT P9400 RAID	Low	11/2001
Remedy/DDTS Replacement	N/A	4.5.2	None	Low	11/2001 (est.)
Data Pools SAN	N/A	---	Hardware Delivery PSR delivery for Solaris 8, QFS 3.5.3.3, SANergy 2.2.20 9175 Data Object Manager	Low	PVC 09/2001 DAACs 11/2001

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

COTS Product	Baseline Version	Upgrade Version	Dependencies/Installation Sequence Requirements	Criticality for Operational Support	Targeted Completion
AIRS	N/A	AIRS processing	SWGD TP9400 RAID	Medium	Pending negotiation of contract mod.
Anpassword Replacement	2.3	TBD	TBD	Low	Schedule pending decision on Security Proposal
Solaris 8 Hardware Upgrades	N/A	N/A	TBD	High	01/2002
Solaris Operating System Upgrade & Transition	2.5.1	8	Per product dependencies and schedules provided in section 5, Solaris 8-Related Upgrades	High	02/02/2002
Post Solaris Upgrades	Per Product	Per Product	Per product dependencies and schedules provided in section 7, Post-Solaris 8 Upgrades	High	Post-Solaris 8 Delivery Schedules TBD

4. COTS Software Upgrades Prior to Solaris 8 Transition

This section identifies the COTS software products that will be upgraded under Solaris 2.5.1 and the rationale used to justify this upgrade.

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. Other COTS upgrades are targeted only for Solaris 8. These COTS products are addressed in section 5 of this document. Although most of these COTS products will not be released until after the first of the year, work is beginning on these COTS products during the July through December time period. Refer to section 5 for additional information on these COTS software upgrades. For perspective on all Solaris 8-related upgrades, Tables 5-1 through 5.7, located at the beginning of section 5, provides summaries of all categories related to Solaris 8 Upgrades in this document.

4.1 Legato Networker

4.1.1 Description of COTS

Legato NetWorker is a system backup and recovery COTS application that provides the capability to archive, administer, backup, and recover data for the UNIX Operating System.

4.1.2 Rationale for Upgrade

The major driver for the upgrade is the vendor dropping support for Legato Networker 5.x series.

4.1.2.1 Vendor Support

End of support date has not been announced, but the vendor estimates that this is expected to occur by 09/2001. Additionally, IRIX 6.5.9 was not an officially supported platform under the 5.5.1 version. All ECS operating system versions will be fully supported under the 6.02 upgrade version. Upgrade version 6.0.2 is supported on Solaris 8. Solaris 2.5.1 and Solaris 8 install instructions are planned to be included in the PSR.

4.1.2.2 NCRs

No NCRs are associated with this upgrade.

4.1.2.3 Features/Performance Upgrades

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

4.1.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

4.1.2.5 Hardware Product Compatibility

There are no hardware product compatibility issues identified.

4.1.3 Operational Impacts

There are no dependencies on any transitions for this COTS upgrade.

4.1.4 Custom Code Impact

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

4.1.5 Licensing Impact

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

4.1.6 External Drivers

No external drivers have been identified.

4.1.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.1.8 COTS Installation Sequence/Dependencies

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

4.1.9 Conservation of ECS Resources

Upgrade is needed for long term support on Solaris 8. Upgrade scheduled as Pre-Solaris 8 upgrade to mitigate schedule risk at the DAACs.

4.2 Purify 5.3 Sun/SGI Upgrade

4.2.1 Description of COTS

Purify is used in software development to support debugging by identifying memory related bugs in code. Product is used as the standard debugging tool in development and is delivered to the DAAC as a debugging tool for DAAC-developed code.

4.2.2 Rationale for Upgrade

Problems have been identified in current Purify version for the Solaris operating system, version 4.5.1. These problems impact efficient debugging of code. In addition, IRIX and Solaris are currently at different versions of Purify and version consistency of the same product is preferred when possible. The upgraded version will also provide support for 64-bit, as well as, 32-bit code on SGIs. Version 5.3 also provides support for Solaris 8 and all IRIX 6.5 versions, including IRIX 6.5.9, which was not officially supported in the previous SGI version. Previous version did not provide support for Solaris 8.

4.2.2.1 Vendor Support

Although current baseline versions are still supported by the vendor, upgrade to the recently released version mitigates risk related to Solaris 8 upgrade since no previous version supported Solaris 8. Version 5.3 was officially released in January, 2001 and is currently in use in the ECS development environment. An upgrade to the most recent version will provide additional risk mitigation related to end of vendor support.

4.2.2.2 NCRs

No NCRs are identified in association with this COTS product.

4.2.2.3 Features/Performance Upgrades

Improved debugging features and support for 64-bit code on SGIs are expected and desired features of the COTS upgrade.

4.2.2.4 Cross Software Product Compatibility

Purify 5.3 supports current IRIX (7.2.1.3m) and Solaris (4.2) compiler versions. Purify 5.3 will also be compatible with planned IRIX upgrade compiler versions (7.3.x) and Solaris 8 compiler versions (Forte 6.x).

4.2.2.5 Hardware Product Compatibility

There are no hardware product compatibility issues with this COTS product.

4.2.3 Operational Impact

COTS product upgrade is not part of any transition. Installation is independent of other COTS products and hardware devices.

4.2.4 Custom Code Impact

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

4.2.5 Licensing Impact

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

4.2.6 External Drivers

No external drivers have been identified for this COTS product.

4.2.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.2.8 COTS Installation Sequence/Dependencies

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

4.2.9 Conservation of ECS Resources

Upgrade is needed for support on Solaris 8. Upgrade scheduled as pre-Solaris 8 upgrade to mitigate schedule risk at the DAACs.

4.3 Secure Shell (ssh) Upgrade

4.3.1 Description of COTS

Secure Shell (ssh) provides a secure replacement of the "r" commands rlogin (remote login), rsh (remote shell), and rcp (remote copy). The "r" commands make a user's life easier but are very insecure. The Secure Shell programs ssh (provides both remote login and remote shell), scp (secure copy) keep a user's life easy but provide strong authentication (required for interactive access to ECS computer assets) and encryption. User names and passwords are never sent in clear text over the network.

4.3.2 Rationale for Upgrade

Problems have been identified in the current 2.0.13 version of ssh. Problems with host-based connections and runaway daemon processes have been identified. The COTS product will be upgraded to version 2.4 to resolve these problems. NCR ECSed29631 has been created to work these issues.

4.3.2.1 Vendor Support

Vendor support risks will be mitigated with this upgrade, as the vendor actively supports only the most current version.

4.3.1.2 NCRs

The Table 4-1 presents the NCRs that are outstanding for Secure Shell 2.0.13 at time document release. Upgrade to version 2.4 will resolve both NCRs.

Table 4-1. Secure Shell NCRs

NCR ID	Severity	Title
ECSed29630	3	Hostbased Authentication not supported in SSH 2.0.31
ECSed29631	3	SSH 2.0.13 Encounters Errors when Users Logoff of Solaris Systems.

4.3.1.3 Features/Performance Upgrades

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

4.3.1.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

4.3.1.5 Hardware Product Compatibility

There are no hardware product compatibility issues with this COTS product.

4.3.3 Operational Impacts

Installation is independent of other COTS products and hardware devices. Systems Engineering will provide training related to this upgrade.

4.3.4 Custom Code Impact

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

4.3.5 Licensing Impact

There are no licensing keys associated with this product upgrade.

4.3.6 External Drivers

No external drivers have been identified for this COTS product.

4.3.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.3.8 COTS Installation Sequence/Dependencies

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

4.3.9 Conservation of ECS Resources

Upgrade to the most current version will mitigate end-of-support risk as vendor actively supports only the most current version release of products. No additional upgrade will be required for the planned Solaris 8 upgrade, although recompiling of the 1.3.7 and 2.4 versions for Solaris 8 are expected.

4.4 Network Time Protocol (NTP)

4.4.1 Description of COTS

NTP is a freeware product used to synchronize time across a set of computers. This freeware product will provide Time Services for the 6A_XX Sockets release of custom code. NTP will be used for this service on Solaris hosts. 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.

4.4.2 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_XX. NTP and the IRIX operating system utility *timed* will provide a Time Service for Sockets.

4.4.2.1 Vendor Support

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

4.4.2.2 NCRs

No NCRs are associated with this upgrade.

4.4.2.3 Features/Performance Upgrades

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

4.4.2.4 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.

4.4.2.5 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

4.4.3 Operational Impacts

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

4.4.4 Custom Code Impact

6A_XX custom code release requires a Time Service compatible with Sockets.

4.4.5 Licensing Impact

There are no licensing impacts. NTP is freeware product.

4.4.6 External Drivers

Removal and/or shut down of DCE Time Services are required for implementation. The 6A_XX Transition will address these issues.

4.4.7 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. PSR will address this configuration.

4.4.8 COTS Installation Sequence/Dependencies

DCE and DCE Time Services need to be shut down or removed before NTP and *timed* are implemented as the ECS Time Service. The process will be addressed in 6A_XX transition documents and NTP PSR.

4.5 Tripwire 1.3 Upgrade for Solaris

4.5.1 Description of COTS

Tripwire version 1.3 is a tool that aids in the detection of unauthorized modifications of files resident on Sun systems. It may be executed on an as needed basis. These utility checks 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.

4.5.2 Rationale for Upgrade

The new version provides increased integrity assurance and additional functionality, which ECS requires.

4.5.2.1 Vendor Support

Version 1.2 is no longer supported. SGIs have been upgraded to 1.3. With this upgrade, Solaris hosts will be brought to the most current freeware version.

4.5.2.2 NCRs

No NCRs are associated with this upgrade.

4.5.2.3 Features/Performance Upgrades

No additional features or performance gains are expected with upgrade.

4.5.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

4.5.2.5 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

4.5.3 Operational Impacts

There are no dependencies on any transitions for this COTS upgrade.

4.5.4 Custom Code Impact

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

4.5.5 Licensing Impact

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

4.5.6 External Drivers

No external drivers have been identified.

4.5.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.5.8 COTS Installation Sequence/Dependencies

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

4.6 NCDWare

4.6.1 Description of COTS

NCDWare is the software used to boot X-term hardware devices to their operational state. The software is installed on Solaris hosts. The X-term hardware, on start up will find the NCDWare X-term Operating System software and using this installation to “boot” and become operational.

4.6.2 Rationale for Upgrade

Active product support and support for Solaris 8 are the primary drivers for upgrade.

4.6.2.1 Vendor Support

Current version continues to be supported by the vendor, but a recommendation to upgrade would be an expected support response if a serious problem would occur with current product. An upgrade is required for Solaris 8 support. Since most recent version supports both the current Solaris 2.5.1 Operating System release and Solaris 8, an upgrade is planned for delivery in July 2001.

4.6.2.2 NCRs

No NCRs are associated with this upgrade.

4.6.2.3 Features/Performance Upgrades

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

4.6.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

4.6.2.5 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

4.6.3 Operational Impacts

There are no dependencies on any transition(s) for this COTS upgrade.

4.6.4 Custom Code Impact

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

4.6.5 Licensing Impact

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

4.6.6 External Drivers

No external drivers have been identified.

4.6.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.6.8 COTS Installation Sequence/Dependencies

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

4.7 Autosys 3.5 Upgrade

4.7.1 Description of COTS

Autosys is an automated control system for scheduling, monitoring, and reporting on computer jobs. ECS uses Autosys to control PRONG (Processing) administrative jobs running on the DPS Queuing Server computer and science production jobs running on the science computers.

4.7.2 Rationale for Upgrade

The product is at the end-of-life for the current baselined version (3.4.2). Additionally, there is a known incompatibility with the baselined version 3.4.2 version in regards to support of the Sybase ASE 11.9.2 upgrade being planned for delivery in August 2001.

4.7.2.1 Vendor Support

Current baselined version of product is at end-of-life. Known incompatibilities with planned Sybase 11.9.2 have also been identified by the vendor. Upgrade to Autosys 3.5 will mitigate both of these risks.

Issues related to upgrade and support for Autosys Remote Agent IRIX 6.5 were also identified. The CUT team worked with SGI and vendor (Computer Associates) to resolve support issues. Agreement was reached that development work would resume for Autosys 3.5 for IRIX 6.5. The responsible engineer incorporated the released IRIX 6.5 Remote Agent into the process with installation in the Functionality Lab.

4.7.2.2 NCRs

The previous NCRs against this COTS product were resolved by this upgrade. Testing identified that the fixes for the previous version, as implemented in NCR ECSed20729, ECSed26896,

ECSed23081 and ECSed24159 were no longer required. Work is in progress to remove the custom code wrappers that were used to resolve issues with previous version.

The Table 4-2 presents the NCRs that are currently outstanding for Autosys version 3.4.2 at time document release.

Table 4-2. Autosys NCRs

NCR ID	Severity	Title	State
ECSed24670	3	AutoSys Hostscape Display Never Completes Startup	A
ECSed20731	3	AutoSys High-Availability mode not presently supported	R – Recommended for closure as High-Availability Server implementation no longer used.

4.7.2.3 Features/Performance Upgrades

No identified enhanced performance or additional features have been identified with this upgrade.

4.7.2.4 Cross Software Product Compatibility

Autosys has a Sybase ASE version dependency. Upgrade to version 3.5 will provide support for the current baselined Sybase ASE 11.5.1 and the planned Sybase 11.9.2 upgrade. Autosys 3.5 will also support the Post-Solaris upgrade to Sybase ASE 12.0.

This version also supports Solaris 8, so that the product will not require an upgrade to support a more recent version of the Solaris Operating System.

4.7.2.5 Hardware Product Compatibility

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

4.7.3 Operational Impact

Upgrade must occur prior to the Sybase ASE 11.9.2 upgrade, but is not associated with any other transition.

4.7.4 Custom Code Impact

The custom code wrappers (EcDpPrAutoSysEventor.pl and EcDpPrAutoSysSendEvent.pl) previously delivered with Autosys 3.2.2 have been identified for removal. Action item is being tracked by CUT team.

4.7.5 Licensing Impact

Product required licensing keys. Procedures to obtain and install licensing keys will be included in the PSR for the upgrade.

4.7.6 External Drivers

No external drivers have been identified.

4.7.7 Other Impacts/Comments

No other impacts have been identified for this COTS product upgrade.

4.7.8 COTS Installation Sequence/Dependencies

As identified in the Sybase ASE 11.9.2 upgrade and in Table 4-2, Autosys is required to be upgraded **PRIOR** to installation of Sybase ASE 11.9.2, because of known incompatibilities of the current baselined version of Autosys (3.4.2) with Sybase ASE 11.9.2.

4.8 Sybase ASE 11.9.2/11.9.3 and Sybase SQL Server Monitor Upgrade

4.8.1 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.

4.8.2 Rationale for Upgrade

The primary rationale for upgrading Sybase ASE and Sybase SQL Server Monitor is Sybase vendor support. Support for this COTS product is considered critical to effective COTS software risk management because the product is used in several subsystems and problems with effective functioning of the product could cause potentially severe impacts to overall ECS system functions.

4.8.2.1 Vendor Support

Sybase software maintenance support policy is to identify end-of-support dates for specific product versions on some or all hardware/operating system platforms.

On October 12, 2000, Sybase extended their originally announced end-of-support dates for 11.9.x series. End-of-support date is 03/15/2002 for Sybase ASE 11.9.2 on Solaris. End-of-support date is 12/31/2001 for Sybase ASE 11.9.3 on IRIX.

All Sybase ASE versions beyond 11.9.2 (including 11.9.3, 12.0 and 12.5) require the most recent operating systems versions. This was and is an issue with Sun machines because Sybase 12.0 is available for Solaris, however, this version is not supported on Solaris 2.5.1, the current Sun OS in ECS. Therefore an upgrade to Sybase ASE 12.0 is not currently an option while baseline remains at Solaris 2.5.1. The Sybase ASE/Monitor upgrades to 11.9.2 on Sun and 11.9.3 on SGI will be the installed version when the Solaris 8 Transition occurs. Post-Solaris upgrades of Sybase products to versions that will be supported through end of contract is planned and is discussed in section 7, Post-Solaris 8 Upgrades in this document.

Table 4-3 presents the “Pre-Solaris” Sybase upgrades planned and identifies certification level for Solaris 2.5.1 and Solaris 8.

Table 4-3. Sybase Product Transition to Solaris 8

COTS Product	Version	End of Support Date	Pre-Solaris 8 Platform Support	Solaris 8 Transition Support
Sybase ASE/Monitor for Solaris	11.9.2	03/31/2002	Certified for Solaris 2.5.1	Certified for Solaris 8 on Ultra chip hosts
Sybase ASE/Monitor for IRIX	11.9.3	12/31/2001	Certified for Solaris 2.5.1	Certified for IRIX 6.5
Sybase Replication Server	11.5.1	03/31/2002	Certified for Solaris 2.5.1	Certified for Solaris 8
Sybase Central	3.0	03/31/2002	Certified for Windows95	Certified for Windows95

4.8.2.2 NCRs

No NCRs are associated with this upgrade.

4.8.2.3 Features/Performance Upgrades

Upgrades are planned primarily for vendor support, although the row-locking feature provided in this version is expected to provide some performance gains. The following new features are also included with the planned upgrades.

- Row level and data page only level locking
- Enhancements in Statistics and Query Optimization
- Statistics are kept in two tables, systabstats and sysstatistics
- Statistics are kept on a per-column basis, rather than a per-index basis

- New utility, `optdiag`, can extract statistics and allows editing of statistics
- Query costing in the optimizer enhanced to use column-level statistics for search arguments and joins, even if indexes do not exist on the column
- The `update statistics` command supports storing statistics for unindexed column
- A new `update index statistics` create statistics on all columns used in an index
- The `update all statistics` command generates statistics for all columns in a table
- The new `delete statistics` command can be used to drop column-level statistics, since `drop index` no longer removes statistics
- Enhancements to the `create index` command (command allows the user to specify ascending and descending order for each column in the index)
- Indexes can include as many as 31 key columns
- Redesign and enhancement of both logging and recovery
- Only rows that are modified are locked
- One log record for every modified row
- Multiple rows on the same page can be modified by different transactions concurrently
- CLRs are used regardless of the chosen locking scheme
- Data page timestamps always increase
- Last Chance Threshold (LCTs) automatically set up all log segments, whether log segment is dedicated or mixed with data segments
- Free space accounting is now used for all databases, not just those with a dedicated log segment
- LCT on mixed-segment databases are dynamic, based on extent allocation
- The `lct_admin()` system function has been modified to handle sizing and administration of LCT
- LCT and ULC are now on all databases. This includes databases without a dedicated log segment
- Recovery restructured into three single passes: Analysis, Redo, and Undo
- Configurable database recovery order

4.8.2.4 Cross Software Product Compatibility

Analysis has been performed to verify that Sybase ASE 11.9.2 and ASE 11.9.3 are compatible or will be compatible with all COTS products at the time of upgrade. This analysis is provided in Table 4-4 below.

Table 4-4. COTS with Sybase ASE 11.9.2/11.9.3 Dependencies

COTS Product	Deployed as Status	COTS Baseline Product Version	Sybase ASE Compatibility
Autosys Server	OPS	3.4.2	Known incompatibility of Autosys 3.4.2 with Sybase ASE 11.9.2. Version 3.4.2 is at end-of-life and will be upgraded to version 3.5 prior to release of 11.9.2. Autosys 3.5 supports Sybase ASE 11.5.1, 11.9.2 and 12.0.
DB Vision	OPS	3.1.8	Supports Sybase ASE 11.0 through 11.9.2.
DBTools.h++/CT.lib	DEV	3.1.4	Supports OpenClient 11.1.1 (OpenClient is interface, not ASE version) – used on Sun only
HP-UX	OPS	10.2	Supports ASE 11.0.3.3/11.5.1/11.9.2 is supported
IQ Report Writer	OPS	5.5.01	Not certified for 11.9.2, but vendor will support although upgrade may be necessary to resolve an identified problem. Tested satisfactorily in the EDF. No certified version for Sybase 11.9.2 is currently available.
IRIX	OPS	6.5.6m	Supports ASE 11.5.1; 11.9.3; 12.5/OC 12
Remedy ARS Server	OPS	3.2.1	Supports ASE 11.5 (11.5.1/11.9.2 not officially certified, but vendor reports no known problems with use w/existing customers)
Solaris	OPS	2.5.1	Supports Sybase ASE 11.5.1 & 11.9.2
SQR (BRIO report)	OPS	4.3.4	Supports OpenClient 11.1.1/ASE 11.5.1/11.9.2
SQS (Spatial Query Server)	OPS	3.2.2	Supports OpenClient 11.1.1/12; all ASE 11 versions
Sybase Central	OPS	3.0.0	Supports all ASE versions through 12.0
Sybase Open Client/C for SGI	OPS	12.0.0	12.0 compatible with 11.5.1 through 12.5
Sybase Open Client/C for Sun	OPS	11.1.1	11.1.1 compatible with 11.0.3.3 through 12.5
Sybase Replication Server/Manager	OPS	11.5.1	Compatible with ASE 11.0.3.3, 11.5.1, 11.9.2, 12.0, 12.5
Tivoli	OPS	3.6.3/3.6.2	Tivoli Framework 3.6.3 and Enterprise Console to 3.6.3 support 11.5.1 & 11.9.2

4.8.2.5 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

4.8.3 Operational Impacts

There are no dependencies on any transitions for this COTS upgrade.

4.8.4 Custom Code Impact

This analysis is included in Table 4-2 above as applied to COTS used and delivered with the custom code. Refer to products with “Deployed as Status” of DEV in this table.

4.8.5 Licensing Impact

Product does not currently require license key installation or administration.

4.8.6 External Drivers

No external drivers have been identified.

4.8.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.8.8 COTS Installation Sequence/Dependencies

As noted in Table 4-2, some upgrades will be needed for compatibility with the Sybase ASE 11.9.2/11.9.3 upgrade. The following upgrades need to occur prior to the Sybase ASE 11.9.2 upgrade.

- Tivoli must be upgraded to version 3.6.3 of Framework and 3.6.2 of Enterprise Console (TE/C) prior to Sybase ASE 11.9.2 upgrade. Refer to Tivoli PSR, Document # 910-TDA-155) for additional information regarding this upgrade. Tivoli PSR was completed 07/10/2001.
- Autosys Server also needs an upgrade to version 3.5 for compatibility with the Sybase ASE 11.9.2 upgrade. Refer to section 4.7, Autosys 3.5 Upgrade for additional information regarding this upgrade. Autosys 3.5 PSR will be completed 07/2001.

These upgrades may occur at any time prior to the Sybase ASE 11.9.2 upgrade, as both have been confirmed to support both Sybase ASE 11.5.1 and Sybase ASE 11.9.2.

4.8.9 Conservation of ECS Resources

Upgrade is targeting the most recent Generally Available (GA) version for the current baselined Solaris and IRIX operating system versions.

4.9 ClearCase 4.1

4.9.1 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.

4.9.2 Rationale for Upgrade

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

4.9.2.1 Vendor Support

ClearCase version 3.2.1 reached end of support as of 06/01/2001 and 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 would be required to support Solaris 8 and to be supported by the vendor on Solaris 8.

4.9.2.2 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 NCR.

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

There are no known software product compatibility issues.

4.9.2.5 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

4.9.3 Operational Impacts

There are no dependencies on any transitions for this COTS upgrade.

4.9.4 Custom Code Impact

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

4.9.5 Licensing Impact

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

4.9.6 External Drivers

No external drivers have been identified.

4.9.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.9.8 COTS Installation Sequence/Dependencies

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

4.10 Forcheck

4.10.1 Description of COTS

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

4.10.2 Rationale for Upgrade

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

4.10.2.1 Vendor Support

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

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 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

4.10.3 Operational Impacts

There are no dependencies on any transitions for this COTS upgrade.

4.10.4 Custom Code Impact

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

4.10.5 Licensing Impact

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

4.10.6 External Drivers

No external drivers have been identified.

4.10.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.10.8 COTS Installation Sequence/Dependencies

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

4.11 Tivoli Distributed Monitor/Software Distribution 3.6.2

4.11.1 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.

4.11.2 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.

With this information and knowledge of the broad impact that a Tivoli upgrades entails, in an effort 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 4/2002. This Tivoli Client/Server upgrade is discussed in Section 7.1, Tivoli Server/Client

4.11.2.1 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.

4.11.2.2 NCRs

No NCRs are identified in association with this COTS product.

4.11.2.3 Features/Performance Upgrades

No additional features or performance upgrades 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-dependent version.

4.11.2.4 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 12.0 by all Tivoli components.

4.11.2.5 Hardware Product Compatibility

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

4.11.3 Operational Impact

Operational impact would be minimized by upgrade of two remaining Tivoli modules on Solaris 2.5.1.

4.11.4 Custom Code Impact

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

4.11.5 Licensing Impact

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

4.11.6 External Drivers

No external drivers have been identified for this COTS product.

4.11.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.11.8 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. The post-Solaris Tivoli upgrade discussed in Section 7.1, Tivoli Server/Client, must be delivered prior to the post-Solaris Sybase ASE 12.0 upgrade for compatibility with this Sybase version.

4.12 Spatial Query Server (SQS)

4.12.1 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

4.12.2 Rationale for Upgrade

The major driver for upgrade is announced end of support date for SQS version 3.2.2.

4.12.2.1 Vendor Support

Support of version 3.2.2 will 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 on schedule in mid-April, and is being installed and integrated.

4.12.2.2 NCRs

The Table 4-5 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 4-5. SQS NCRs

NCR ID	Severity	Title
ECSed23719	1	e0acg01: SQS server went down.
ECSed21487	4	SQS 3.2.2 (2): 'llbox template' and 'SDT_set template vs llbox' errors
ECSed22897	3	SQS 3.2.2 does not forward all error messages to its log file

4.12.2.3 Features/Performance Upgrades

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

4.12.2.4 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 12.5 upgrade.

4.12.2.5 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

4.12.3 Operational Impacts

There are no dependencies on any transitions for this COTS upgrade.

4.12.4 Custom Code Impact

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

4.12.5 Licensing Impact

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

4.12.6 External Drivers

No external drivers have been identified.

4.12.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.12.8 COTS Installation Sequence/Dependencies

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

4.13 Anlpassword Replacement

4.13.1 Description of COTS

Anlpassword is a freeware product that provides password checking features supporting ECS security policies.

4.13.2 Rationale for Replacement

Password corruption problems have been identified with freeware product. Problems are related by inability to support shadow password mechanisms in more recent operating system environments. Product has been identified for replacement. A replacement product has been proposed in NPG 2810-1 (Security of Information Technology) submission. Work on replacement of Anlpassword is awaiting response to NPG 2810-1 (Security of Information Technology) submission. A supported COTS product is preferred to unsupported freeware. Capabilities included in this submission could possibly replace this freeware product.

4.13.2.1 Vendor Support

Freeware product has not been updated for more recent password features such as shadow passwords. No further work is planned beyond current version.

4.13.2.2 NCRs

No NCRs are associated with this upgrade.

4.13.2.3 Features/Performance Upgrades

This issue will be reviewed when replacement product is identified and approved.

4.13.2.4 Cross Software Product Compatibility

This issue will be reviewed when replacement product is identified and approved.

4.13.2.5 Hardware Product Compatibility

This issue will be reviewed when replacement product is identified and approved.

4.13.3 Operational Impacts

This issue will be reviewed when replacement product is identified and approved.

4.13.4 Custom Code Impact

This issue will be reviewed when replacement product is identified and approved.

4.13.5 Licensing Impact

This issue will be reviewed when replacement product is identified and approved.

4.13.6 External Drivers

No external drivers have been identified.

4.13.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.13.8 COTS Installation Sequence/Dependencies

This issue will be review when replacement product is identified and approved.

4.14 StorEdge Volume Manager

4.14.1 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.

4.14.2 Rationale for Upgrade

The primary drivers for this upgrade are end of support for current version and support for Solaris 8.

4.14.2.1 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.

4.14.2.2 NCRs

No NCRs are associated with this upgrade.

4.14.2.3 Features/Performance Upgrades

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

4.14.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

4.14.2.5 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

4.14.3 Operational Impacts

There are no dependencies on any transitions for this COTS upgrade.

4.14.4 Custom Code Impact

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

4.14.5 Licensing Impact

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

4.14.6 External Drivers

No external drivers have been identified.

4.14.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.14.8 COTS Installation Sequence/Dependencies

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

4.15 Acrobat Reader

4.15.1 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.

4.15.2 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.

4.15.2.1 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. Work will begin on

upgrade based on schedule impacts. The most current version available for Sun and PCs will be used for upgrade. Version 5.0 will be used if available for Sun, SGI and PCs. If not available, 4.05 will be utilized for Sun, as SGI is already at version 4.05.

4.15.2.2 NCRs

No NCRs are associated with this upgrade.

4.15.2.3 Features/Performance Upgrades

No additional features or performance gains are expected with upgrade.

4.15.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

4.15.2.3 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

4.15.3 Operational Impacts

There are no dependencies on any transitions for this COTS upgrade.

4.15.4 Custom Code Impact

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

4.15.5 Licensing Impact

There are no license keys associated with this freeware product.

4.15.6 External Drivers

No external drivers have been identified.

4.15.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.15.8 COTS Installation Sequence/Dependencies

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

4.16 SGI MIPSpro Compilers/ProDev

4.16.1 Description of COTS

Because of the upgrade of RogueWave Tools identified in Table 5-5, an upgrade of SGI MIPSpro Compilers are also required. 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.

4.16.2 Rationale for Upgrade

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

4.16.2.1 Vendor Support

Upgrade is needed for compatibility and support for RogueWave libraries.

4.16.2.2 NCRs

No NCRs are identified in association with this COTS product.

4.16.2.3 Features/Performance Upgrades

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

4.16.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues,

4.16.2.5 Hardware Product Compatibility

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

4.16.3 Operational Impact

There are no known operational impact issues.

4.16.4 Custom Code Impact

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

4.16.5 Licensing Impact

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

4.16.6 External Drivers

No external drivers have been identified for this COTS product.

4.16.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.16.8 COTS Installation Sequence/Dependencies

There are no installation or COTS product dependencies.

4.17 Product Distribution System (PDS) COTS Turnover

4.17.1 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 planned at PDS Phase 4. The PDS Group, who have been supporting the PDS implementation will turnover support for the hardware and software to Landover. The COTS products used with PDS will be supported and upgraded within the COTS upgrade process. Table 4-6 identifies the new COTS software products and/or versions that will be added to the COTS upgrade process.

Table 4-6. New COTS Software at PDS Turnover

Product	Version	PDS Host	Platform/OS	Deployment
Oracle Enterprise 8i	8.1.6	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

4.17.2 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.

4.17.2.1 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 SGI IRIX 6.5. This will be the last release on SGI. Oracle has confirmed that product will be supported on IRIX 6.5 for at least two years after that date.

4.17.2.2 NCRs

There are NCRs that are outstanding for PDS at time of document release. These NCRs may or may not be related to the COTS products that will be turned over at PDS Phase 4. It is expected that these NCRs will closed before PDS Phase 4 turnover.

4.17.2.3 Features/Performance Upgrades

Capability to support CD-R and DVD are provided.

4.17.2.4 Cross Product Compatibility

There are no identified cross-product compatibility issues.

4.17.2.5 Hardware Product Compatibility

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

4.17.3 Operational Impacts

There should be no additional operational impacts at turnover to the DAACs, as the PDS installations will have been completed. PDS installations will need to occur in additional EDF locations, including Functionality Lab, IDG Cell and DDM, in order to support the PDS COTS hardware and software. Review of hardware and software impacts is in progress.

4.17.4 Custom Code Impacts

PDS custom code will have been integrated with PDS COTS products prior to turnover.

4.17.5 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. License availability for these sites is under review.

4.17.6 External Drivers

No external drivers have been identified.

4.17.7 Other Impacts/Comments

No other impacts have been identified.

4.17.8 COTS Installation Sequence/Dependencies

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

4.18 Dashboard COTS Software Turnover

4.18.1 Description of COTS

The Phase 2 ECS Dashboard provides the capability to monitor and report on the following ECS functions and processes:

- 1) Ingest
- 2) Production
- 3) Inventory
- 4) Physical Archive
- 5) Search/order/distribution (including integrated browse)

The ECS Dashboard also provides the capability to perform ad hoc, web-based SQL queries of the contents of all ECS Dashboard databases.

Dashboard consists of Dashboard custom code and COTS products. Some new COTS products will be introduced to ECS with turnover. Table 4-7 identifies the new COTS products and/or versions that will be introduced into the ECS baseline.

Table 4-7. New COTS Software at Dashboard Turnover

Product	Version	Dashboard Host	Platform/O S	Deployment	Comment
Sybase OpenServer	42.0	Dashboard Application Server	Sun/OS version TBD	OPS	Dashboard Team has identified that Sybase OpenClient will be used instead of Open Server or Replication Server.
PopChart Image Server/Image Builder	3.8	Dashboard Web Server	Sun/OS version TBD	OPS	
Apache Server	1.3.14	Dashboard Web Server	Sun/OS version TBD	OPS	
Jakarta Tomcat	3.2	Dashboard Web Server	Sun/OS version TBD	OPS	
Jconnect for Solaris	5.2	Dashboard Web Server	Sun/OS version TBD	OPS	
mod_ssl	2.8.x	Dashboard Web Server	Sun/OS version TBD	OPS	
OpenSSL	0.9.x	Dashboard Web Server	Sun/OS version TBD	OPS	
PERL	5.6.0	Dashboard Web Server	Sun/OS version TBD	OPS	
jre for Solaris	1.3	Dashboard Web Server	Sun/OS version TBD	OPS	
MM	1.1.x	Dashboard Web Server	Sun/OS version TBD	OPS	

4.18.2 Rationale for Upgrade

If ECS Dashboard is not installed at the DAACs, the DAACs will not enjoy the anticipated cost savings due to reduced reporting workload. ESDIS, DAACs, ECS M&O staff, ECS EDF, and science teams, will be able to go directly to the Dashboard at each site for current information on ECS progress and performance. This should reduce the workload at individual DAACs.

4.18.2.1 Vendor Support

Sybase OpenServer and PopChart are commercial products. The remaining products are freeware. Dashboard will be turned over prior to the Solaris 8 Transition running on the Solaris 2.5.1 baseline. After turnover a review will be conducted to identify any potential impacts to the Solaris 8 upgrade. Upgrades that may be needed to transition Dashboard COTS to the ECS Solaris 8 upgrade will be scheduled.

4.18.2.2 NCRs

There are NCRs that are outstanding for Dashboard at time of document release. These NCRs may or may not be related to the COTS products that will be turned over at Dashboard Phase 3. It is expected that these NCRs will closed before Dashboard Phase 3 turnover.

4.18.2.3 Features/Performance Upgrades

ESDIS, DAACs, ECS M&O staff, ECS EDF, and science teams, will be able to go directly to the Dashboard at each site for current information on ECS progress and performance. This should reduce the workload at individual DAACs.

4.18.2.4 Cross Software Product Compatibility

There are no known cross-product compatibility issues. Standardizing on a single version of some COTS products, such as PERL, will be an objective at turnover.

4.18.2.5 Hardware Product Compatibility

In Dashboard Phase 2, implementation on two different hardware hosts is recommended. The Web Server, with the Apache Web Server is recommended for M&O LAN implementation, principally for security reasons. With the planned firewall implementation, this should not be an issue. The Dashboard team is in the process of confirming that implementation on a single host would be feasible and secure (after the firewall implementation at individual DAACs). Targeting a single server Dashboard implementation is planned prior to or with the Solaris 8 Transition. Discussions are in progress with the Dashboard Team on both hardware and software items.

4.18.3 Operational Impacts

There should be no additional operational impacts at turnover to the DAACs, as the Dashboard installations will have been completed. Dashboard installations will still need to occur in additional EDF locations, including Functionality Lab, IDG Cell and DDM, in order to support the Dashboard COTS hardware and software. Review of hardware and software impacts in the EDF is in progress.

4.18.4 Custom Code Impacts

Dashboard custom code will have been integrated with Dashboard COTS products prior to turnover. Dashboard custom

4.18.5 Licensing Impact

Installations at DAACs have been completed and licenses keys provided where required at DAAC sites. Installation in additional EDF environments, such as the PVC, VATC, IDG Cell /DDM and the Functionality Lab are planned so that the Dashboard COTS hardware and software can be supported. License availability for these sites is under review.

4.18.6 External Drivers

No external drivers have been identified.

4.18.7 Other Impacts/Comments

No other impacts have been identified.

4.18.8 COTS Installation Sequence/Dependencies

Additional information on installation sequence and dependencies are provided in the following CM posted documents:

- ECS Dashboard Phase 2 Rev3
- ECS Dashboard Phase 2 Release Document

4.19 Remedy/DDTS Replacement

Remedy and DDTS are two COTS products utilized in ECS to support Trouble Ticket, NCR, and CCR reporting, tracking and resolution. A Remedy-based implementation that will support the functions that DDTS currently provides, as well as the functionality that Remedy currently provides, is underway. This effort is currently in the design phase. This Remedy/DDTS replacement implementation is currently targeted to be delivered to the EDF only. DAACs will be able to communicate with and access the EDF's Remedy configuration via the trouble ticket forwarding capability of their Remedy version running on Solaris 2.5.1 and via the EDF's Remedy Web product's interface. The new Remedy/DDTS replacement implementation will utilize Solaris 8, Remedy version 4.5.2, Remedy Web 4.1.1, and Sybase 12.0.

4.19.1 Rationale for Upgrade

The upgrade and new development is targeted to consolidate Trouble Ticketing/NCR/CCR reporting in a single system. This consolidation will reduce the cost and resource requirements that are inherent in the use of two problem resolution supporting COTS products. DDTS removal will be tied to acceptance of Remedy/DDTS Replacement implementation.

4.19.2.1 Vendor Support

Upgrade to version 4.5.x is needed to support the functionality needed for this implementation. Version 4.5.2 is the most current version available from the vendor and will be utilized with the Remedy/DDTS Replacement implementation. The same version of Remedy will be utilized for Solaris 8 transition and delivery to the DAACs. The current version of Remedy (3.2.1), running on Solaris 2.5.1 will be able to communicate with the 4.5.2 Remedy/DDTS Replacement implementation when this implementation is released. The Solaris 8 Remedy upgrade is discussed in section 5.12, Remedy ARS 4.5.2. The Remedy/DDTS Replacement 4.5.2 implementation and the DAAC upgrade to Remedy ARS 4.5.2 during the Solaris 8 transition will be compatible.

4.19.2.2 NCRs

No NCRs are identified in association with this COTS product.

4.19.2.3 Features/Performance Upgrades

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

4.19.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

4.19.2.5 Hardware Product Compatibility

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

4.19.3 Operational Impact

There are no known operational impact issues.

4.19.4 Custom Code Impact

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

4.19.5 Licensing Impact

License keys have been acquired for this implementation in the EDF. There are no licensing issues.

4.19.6 External Drivers

No external drivers have been identified for this COTS product.

4.19.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

4.19.8 COTS Installation Sequence/Dependencies

There are no installation or COTS product dependencies.

4.20 SGI RAID Software Upgrade

4.20.1 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.

4.20.2 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.

4.20.2.1 Vendor Support

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

4.20.2.2 NCRs

There are no NCRs against this product.

4.20.2.3 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.

4.20.2.4 Cross Software Product Compatibility

The TPSSM7 RAID software requires IRIX 6.5.9. Three of the five targeted installations are currently at IRIX 6.5.9. The remaining two 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.

4.20.2.5 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 4-8 identifies the targeted hosts. Table 4-8 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 4-8. TPSSM7 RAID Software Upgrade Targets

Host Name	New/Additional
l0spg10	New
g0spg10	New
g0mog01	Additional
p0tes01	Additional
p0spg07	Additional

4.20.3 Operational Impact

There are no known operational impact issues.

4.20.4 Custom Code Impact

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

4.20.5 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..

4.20.6 External Drivers

No external drivers have been identified for this COTS product.

4.20.7 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.

4.20.8 COTS Installation Sequence/Dependencies

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

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.

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
Acrobat Reader	5.0 or 4.05 (depending on availability)	Yes	Yes	None Identified
Autosys	3.5	Yes	Yes	None Identified
ClearCase	4.1	Yes	Yes	None Identified
Forcheck	12.83	Yes	Yes	None Identified
Legato Networker	6.02	Yes	Yes	None Identified
NCDWare	5.1.140	Yes	Yes	None Identified
Purify	5.3	Yes	Yes	None Identified
StorEdge Volume Manager	3.04	Yes	Yes	None Identified
Sybase ASE/SQL Monitor	11.9.2	Yes	Yes	None Identified
Tivoli Distributed Monitoring/Software Distribution	3.6.2	Yes	Yes	None Identified

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.

In reviewing upgrades and migrations needed for Solaris 8 transitions, some COTS products were identified for removal or proposed for removal. These COTS products are identified in Table 5-2.

Table 5-2. COTS Products Proposed for Removal

COTS Product	Removal Status
DBVision	<p>Architect's Office has reviewed requirements and agreed that Sybase Central and SQL Monitor meet all requirements.</p> <p>DDM has identified that DBVision provides no additional capabilities needed by ECS that are not already provided by Sybase Central and SQL Monitor. Removal of product from baseline and DAAC hosts is in progress.</p> <p>CCR 01-0603 removed DBVision from baseline and included ECOs for removal from DAAC sites.</p>
DDTS	Awaiting completion and acceptance of Remedy/DDTS implementation discussed in section 4.19, Remedy/DDTS Replacement
IQ	Under review by the Architect's Office. Review is focused on whether one or both Report Writers can be removed while meeting currently requirements.
OpenView	Removal Decision Completed (Some new products may be identified to meet requirements)
SQR	Under review by the Architect's Office. Review is focused on whether one or both Report Writers can be removed while meeting currently requirements.

Additional detail regarding planned software removals are provided in Section 6, COTS Software Removals in this document.

Some COTS products that had been 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 patches and other upgrades, not as individual freeware or COTS products. These products are identified in Table 5-3.

Table 5-3. COTS Products Bundled with the OS (1 of 2)

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.

Table 5-3. COTS Products Bundled with the OS (2 of 2)

COTS Product	Version	Comment
NTP	Solaris 8 bundled version (Sun versioning is different than Web Time Server versioning)	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 5-4 identifies the products that will be replaced by another product in the Solaris 8 upgrade. The replacement product is identified in the Solaris 8 upgrade COTS products.

Table 5-4. COTS Products Targeted for Replacement by Another Product

COTS Product	Version	Comment
JetAdmin	N/A	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.
Visual Workshop SPARC Compilers	3.0	Sun has replaced the Visual Workshop product and SPARCCompilers with Forte Developer. Previous licenses have been transfered to Forte C, C++ and FORTRAN suites. These are Sun products, not third party products. This product is described in section 5.5, Forte Developer.

The following upgrades are planned for compatibility with Solaris 8. Many also have end of support issues which will be mitigated by a version upgrade.

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

Table 5-5. Summary of Solaris 8 Dependent COTS Upgrades

COTS Products	Targeted Solaris 8 Version
ACSLs	6.0
Crack	5.0
FIND_DDOS	4.2
FLEXIm	7.2g
Forte Developer (formerly Visual Workshop & SPARC FORTRAN compilers)	6.1 or 6 Update 1
IDL for Sun/SGI/PC	5.5
iPlanet Web Server (formerly Netscape Enterprise Server)	6.0
Java Runtime Environment (jre) for Solaris	1.4 ²
Ghostview	1.5 ³
JetDirect	E.10.18
Netscape Communicator	4.77
PERL	5.6.1
Anlpassword Replacement	TBD ⁴
Remedy ARS	4.5.2
SATAN	1.1.1
Solaris	8 (04/01) (8 07/01 being reviewed)
Secure Shell/TCPWrappers	Secure Shell1.3.7 & 2.4/ TCPWrappers 7.6
Sendmail/Bind	Sendmail 8.11.2 or later Bind 9.1 or later
Sybase Open Client for Solaris	12.0
TCL/tk	8.3.3
Tripwire	1.3
Dashboard COTS Products	TBD ⁵
XRP-II	3.2

In addition to COTS mentioned in the tables above, the following COTS products require additional review to determine if upgrades need to be made to the products identified in Table 5-6.

² JRE and JDK 1.4 are currently in beta. Upgrade to GA version planned as soon as available.

³ Same as current version.

⁴ If replacement product is compatible with Solaris 2.5.1 and Solaris 8, upgrade will proceed as “Pre-Solaris” upgrade.

⁵ Refer to Section 4.18, Dashboard COTS Software Turnover for additional information.

Table 5-6. COTS Products Under Review for Solaris 8

COTS Products	Upgrade Issue under Review
Exabyte	Binary Compatibility with Solaris 8 or identification of replacement product. ⁶
Loadrunner	Originally baselined for VATC, where it is no longer in use. Currently baselined on some DAAC systems. Research needs to verify if this product should be removed from baseline or upgraded.
Xrunner	Originally baselined for VATC, where it is no longer in use. Currently baselined on some DAAC systems. Research needs to verify if this product should be removed from baseline or upgraded.
jConnect	jConnect 5.2 is not certified for Sybase ASE 12.5. jConnect is used on SGI which will be upgraded to Syabase ASE 12.5 as a Post-Solaris upgrade. Version 5.5 is certified for ASE 12.5, 12.0, 11.9.2, 11.9.3 and 11.5.1.
Upgrade of Dashboard Solaris COTS products	A review of Dashboard Solaris COTS products will be made at Dashboard Phase 3 turnover. ⁷

A more detailed discussion of Solaris 8 dependent COTS is provided in the following sections.

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, Netscape Enterprise Server 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 volume managers. Upgrade is to mitigate risks of support terminating for critical ECS COTS products. Risk is 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 to resolve the issue. Decreasing patch support is also expected. Dropping of support for Solaris 2.5.1 in the most recent COTS product versions is the primary driver.

⁶ Product is discussed in Section 5.20, Exabyte Driver

⁷ Dashboard Turnover is discussed in Section 4.18, Dashboard COTS Software Turnover

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 in with each COTS product included in this document.

5.1.2.5 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 8.6 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 to work on completing Solaris 8 and IRIX 6.5.x System Build. Stress testing early and often is a major goal to mitigate custom code impact as much as possible. Table 5-7 provides the development COTS products that have been installed in the EDF to facilitate this effort.

Table 5-7. Development COTS Products

Development COTS Product	Current Baseline Version	Targeted Baseline Version
Visual Workshop for C++/FORTRAN 77 & FORTRAN 90 Compilers	3.0/4.2	Forte 6.1: C, C++ and HPC suites
Rogue Wave Libraries: DBTools Tools ToolsPro	DBTools 3.1.4 Tools 7.0b ToolsPro 1.1.1	DBTools 4.2 Tools 7.5 ToolsPro 1.3
Builders Xcessory/Epak	5.0.3 (BX) 3.0 (Epak/GraphPak)	5.0.8 (BX) 3.04 (Epak/GraphPak)
JAVA SDK for Solaris	1.2.1	1.4
ClearCase in the EDF	3.2.1	4.1
TCL/TK	8.0 patch 4	8.2.3
HDF	4.1r3 Solaris 2.5.1 binary	4.1r3 & 5-1.4.1
Boulder Software (XVT) DSC	4.6	5.1
SGI MIPSpro Compilers/ProDev for RogueWave Upgrades *	7.2.1.3m/2.7	7.3.1.2/2.8.1
ClearCase for Sun/SGI at the DAACs	3.2.1	4.1

* Because of the upgrade of RogueWave Tools identified above, an upgrade of SGI MIPSpro Compilers are also required. The RogueWave versions require MIPSpro C++ compiler 7.3.1.x. 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 compiler upgrades. This upgrade will be delivered as a “Pre-Solaris” COTS upgrade, since it is not dependent on Solaris 8 installation.

5.1.5 Licensing Impact

There are no licensing issues with this software.

5.1.6 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.

5.1.7 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.

5.1.8 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 ACSLs 6.0

5.2.1 Description of COTS

Automated Cartridge System Library Software (ACSLs) from StorageTek is a software package that runs the front-end for the STK Powderhorn or Wolfcreek tape silos.

5.2.2 Rationale for Upgrade

End of support is the primary driver for upgrade. Supported version requires an operating system upgrade.

5.2.2.1 Vendor Support

End of support for 5.3.x and 5.4 versions have been announced by the vendor to occur starting 10/01/2001. Version 6.0 requires Solaris 7 or Solaris 8.

5.2.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.2.2.3 Features/Performance Upgrades

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

5.2.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.2.2.5 Hardware Product Compatibility

Version 6.0 of the ACSLS software requires a hardware upgrade of all SPARC 5s, SPARC10s and SPARC 20/50s. Sun Ultra 10 upgrades are planned to replace current SPARC 5s, 10s and 20/50s at all DAAC sites.

5.2.3 Operational Impact

There are no identified operational impacts associated with this product.

5.2.4 Custom Code Impact

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

5.2.5 Licensing Impact

There are no licensing issues with this software.

5.2.6 External Drivers

No external drivers have been identified for this COTS product.

5.2.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.2.8 COTS Installation Sequence/Dependencies

The following must occur before proceeding with the ACSLS upgrade:

1. The hardware should be upgraded to an Ultra10 if the current machine is a SPARC5, SPARC10 or SPARC20/50.
2. The Solaris 8 Operating System must be installed prior to performing the ACSLS version 6.0 upgrade. Version is not compatible with current Solaris 2.6 Operating System versions.

5.2.9 Solaris 8 Upgrade Notes

The baseline footprint for this COTS product is small and no custom code is present on the ACSLS hosts. This upgrade will be planned and implemented as soon as the following PSRs are available:

- Solaris 8 Operating System Upgrade PSR
- ACSLS 6.0 Upgrade PSR
- Secure Shell/TCP Wrappers for Solaris 8

The remaining baselined COTS products on this machine will be compatible with Solaris 8. Since there is no custom code on ACSLS machines, this upgrade may take place as soon the PSRs specified above are available, i.e., prior to the Solaris 8 Transition.

5.3 FIND_DDOS 4.2

5.3.1 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 “mservers”, 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.

5.3.2 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.

5.3.2.1 Vendor Support

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

5.3.2.2 NCRs

No NCRs are identified in association with this COTS product.

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, except for Solaris 8 Operating System.

5.3.2.5 Hardware Product Compatibility

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

5.3.3 Operational Impact

There are no known operational impact issues.

5.3.4 Custom Code Impact

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

5.3.5 Licensing Impact

There are no licensing issues with this software.

5.3.6 External Drivers

No external drivers have been identified for this COTS product.

5.3.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.3.8 COTS Installation Sequence/Dependencies

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

5.4 FLEXlm 7.2g

5.4.1 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

5.4.2 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, 7.2g or greater, to assure no additional upgrades needed will be needed to support other COTS products that utilize FLEXlm for license management.

5.4.2.1 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 FLEXlm 6.1.

5.4.2.2 NCRs

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

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

There are no known software product compatibility issues.

5.4.2.5 Hardware Product Compatibility

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

5.4.3 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 machines, is utilized as the redundant server license key. This installation and special license key enables license server failover to occur when one license server fails or is brought down. The PSR installation and the Transition Plan assume that the baselined FLEXlm 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.

5.4.4 Custom Code Impact

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

5.4.5 Licensing Impact

There are no licensing issues with this software, except that special license keys naming all three Solaris FLEXlm 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.

5.4.6 External Drivers

No external drivers have been identified for this COTS product.

5.4.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.4.8 COTS Installation Sequence/Dependencies

The Solaris 8 operating system upgrade is to be installed before upgrading the COTS product to this version. While this version is compatible with Solaris 2.5.1, it will be overwritten with the Solaris 8 installation and will be required to be reinstalled.

5.5 Forte Developer 6.1

5.5.1 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

5.5.2 Rationale for Upgrade

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

5.5.2.1 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.

5.5.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.5.2.3 Features/Performance Upgrades

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

5.5.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.5.2.5 Hardware Product Compatibility

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

5.5.3 Operational Impact

There are no identified operational impacts associated with this product.

5.5.4 Custom Code Impact

Solaris 8 requires upgrade to Forte 6 compilers. This will require recompile of all Sun custom code.

5.5.5 Licensing Impact

License keys are required for specific functionality to be available.

5.5.6 External Drivers

No external drivers have been identified for this COTS product.

5.5.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.5.8 COTS Installation Sequence/Dependencies

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

5.6 Java Runtime Environment (jre) for Solaris 1.4

5.6.1 Description of COTS

The Java Runtime Environment (also known as the Java Runtime 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

Current version (1.2.1) is not officially supported on Solaris 8.

5.6.2.1 Vendor Support

Version 1.4 has the features that are required by the DAR-Tool developers for the Solaris 8 version. This version is currently in beta. The beta version will be used until version 1.4 is GA (Generally Available). Upgrade to the GA version will occur as soon as it is released.

5.6.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.6.2.3 Features/Performance Upgrades

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

5.6.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.6.2.5 Hardware Product Compatibility

There are no identified operational impacts associated with this product.

5.6.3 Custom Code Impact

Features needed for Solaris 8 version of Java DAR-Tool are provided with version 1.4. Dashboard is currently using jre 1.3 (expected version at phase 3 turnover). Dashboard custom code will need to be tested for compatibility with this version.

5.6.4 Licensing Impact

There are no licensing issues with this software. It is freeware provided by SunSoft.

5.6.5 External Drivers

No external drivers have been identified for this COTS product.

5.6.6 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.6.7 COTS Installation Sequence/Dependencies

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

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 only driver. No upgrades are available for either Secure Shell or TCPWrappers. TCPWrappers version 7.6 and Secure Shell Commercial versions 1.3.7 and 2.4 will continue to be used for Solaris 8.

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 Hardware Product Compatibility

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

5.7.3 Operational Impact

There are no identified operational impacts associated with this product.

5.7.4 Custom Code Impact

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

5.7.5 Licensing Impact

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

5.7.6 External Drivers

No external drivers have been identified for this COTS product.

5.7.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.7.8 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. It is a candidate 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.

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. 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 Hardware Product Compatibility

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

5.8.3 Operational Impact

There are no identified operational impacts associated with this product.

5.8.4 Custom Code Impact

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

5.8.5 Licensing Impact

There are no licensing issues with this software.

5.8.6 External Drivers

No external drivers have been identified for this COTS product.

5.8.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.8.8 COTS Installation Sequence/Dependencies

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

5.9 Netscape Communicator 4.77

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

Although version 6.0 has been released, it is reported to be somewhat unstable. Version 6.1 is at a “Preview” or beta edition. If 6.1 is released as GA and proves stable, it will be considered for upgrade if the schedule impact is not severe. Version 4.77 is currently targeted for upgrade and Solaris compatibility.

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 Hardware Product Compatibility

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

5.9.3 Operational Impact

There are no identified operational impacts associated with this product.

5.9.4 Custom Code Impact

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

5.9.5 Licensing Impact

There are no licensing issues with this software.

5.9.6 External Drivers

No external drivers have been identified for this COTS product.

5.9.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.9.8 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

The Table 5-8 presents the NCRs that are outstanding for Netscape Enterprise Server version 3.6 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 5-8. Netscape Enterprise Server NCRs

NCR ID	Severity	Title
ECSed25270	3	GSFC/SMC: Could not import password file
ECSed25653	2	GSFC/SMC: Change the mail relay configuration to disallow the relaying of mail received outside the gsfc.nasa.gov domain.
ECSed26377	3	Netscape 4.7 Messenger does not display msgs to all users.

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 Hardware Product Compatibility

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

5.10.3 Operational Impact

There are no identified operational impacts associated with this product.

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 Licensing Impact

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

5.10.6 External Drivers

No external drivers have been identified for this COTS product.

5.10.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.10.8 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:

Solaris Only

PNGgraph v.1.11

GD v.1.23

gd v.1.7.3

libpng v.1.05

zlib v.1.1.3

All platforms

DBI v.1.13

DBD::Sybase v.0.21

Tk for PERL will be added with this release at EDC request. Other PERL modules are also being considered.

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.

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 Hardware Product Compatibility

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

5.11.3 Operational Impact

There are no identified operational impacts associated with this product.

5.11.4 Custom Code Impact

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

5.11.5 Licensing Impact

There are no licensing issues with this software.

5.11.6 External Drivers

No external drivers have been identified for this COTS product.

5.11.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.11.8 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 before the first of the year. Release of this version will bring current version 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. The product supports Sybase 11.9.2 and 12.0.

5.12.2.5 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

There are no identified operational impacts associated with upgrading this product.

5.12.4 Custom Code Impact

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

5.12.5 Licensing Impact

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

5.12.6 External Drivers

No external drivers have been identified for this COTS product.

5.12.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.12.8 COTS Installation Sequence/Dependencies

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

5.13 Sendmail/Bind

5.13.1 Description of COTS

Sendmail is a freeware 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.

BIND (Berkeley Internet Name Domain) is an implementation of the Domain Name System (DNS) protocols and provides an openly redistributable reference implementation of the major components of the Domain Name System, including:

- Domain Name System server (named)
- Domain Name System resolver library
- Tools for verifying the proper operation of the DNS server

5.13.2 Rationale for Upgrade

The most recent versions of both sendmail and bind are available for Solaris 8. These versions include significant security features. The ECS Security Group has recommended that the most recent versions of sendmail and bind be utilized with the Solaris 8 upgrade. Because of this recommendation, the bundled Solaris 8 sendmail and bind versions will not be utilized. The versions utilized will be the latest versions available. As of publication, 9.1.2 is the most recent version of bind and 8.11.4 is the latest version of sendmail.

5.12.2.1 Vendor Support

Both products are freeware and therefore have no end of support dates. What information and support is available is typically focused on the most recent versions.

5.13.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.13.2.3 Features/Performance Upgrades

No additional features or performance upgrades 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 Hardware Product Compatibility

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

5.13.3 Operational Impact

There are no identified operational impacts associated with this product.

5.13.4 Custom Code Impact

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

5.13.5 Licensing Impact

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

5.13.6 External Drivers

No external drivers have been identified for this COTS product.

5.13.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.13.8 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 Hardware Product Compatibility

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

5.14.3 Operational Impact

There are no identified operational impacts associated with this product.

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 Licensing Impact

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

5.14.6 External Drivers

No external drivers have been identified for this COTS product.

5.14.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.14.8 COTS Installation Sequence/Dependencies

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

5.15 XRP-II 3.2

5.15.1 Description of COTS

XRP-II and ACCELL (utilizing a Unify database implementation), collectively serve as the ECS Baseline Manager (BLM) and Inventory/Logistics/Maintenance Manager (ILM) tools. XRP-II and ACCELL are COTS software configured with menus, screens, reports, and executables tailored for ECS.

XRP-II's Baseline Manager capabilities enable operators to:

- maintain records that identify what comprises baselined operational system configurations
- identify the versions of hardware and software items baselines contain and the devices, subsystems, and networks the items comprise
- record item interdependencies and sites to which baseline items are deployed

- keep chronological histories of baseline changes and traceability of items to predecessor versions and system releases

XRP-II's ILM capabilities enable operators to:

- track and maintain all of the key data pertaining to ECS contract purchased equipment including hardware, COTS software and software licenses, COTS documentation (hardware and software), spares and consumable items, and Government Furnished Equipment
- store and maintain detailed maintenance data on hardware, to the component level, including preventive and corrective maintenance
- keep chronological histories (a record of transactions) of receipt, installation, and relocation of inventory items

5.15.2 Rationale for Upgrade

Current version needs upgrading for Solaris 8 compatibility.

5.15.2.1 Vendor Support

No COTS upgrades are currently available for this product, but vendor is working to upgrade the product to run on Solaris 8.

5.15.2.2 NCRs

The Table 5-9 presents the NCRs that are outstanding for XRP-II 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 5-9. XRP-II NCRs (1 of 2)

NCR ID	Severity	Description
ECSed10528	4	Product structures changes not updating pm active/inactive dates (XRP-II)
ECSed13995	4	Internal system error in pici when exiting Add Mode (XRP)
ECSed15069	3	XRP: XRP Transaction History Reports have errors
ECSed15131	4	"Where" command not restoring data entry screen on exit (XRP-II)
ECSed19310	3	Y2K: XRP-II not Y2K compliant
ECSed19907	4	XRP-II (ILM) Scanner Eliminate Duplicates doesn't do anything
ECSed19908	4	XRP (ILM) Scanner Error Processing needs improvement
ECSed20028	4	XRP (ILM) EIN Manager: Using /C gets a "Part not found" error (updates)
ECSed27167	3	XRP-II: Residual issues with the MWO Processing enhancement.

Table 5-9. XRP-II NCRs (2 of 2)

NCR ID	Severity	Description
ECSed27170	3	XRP-II: Installation Processing
ECSed27171	3	XRP-II: EIN Archive trans can fail to archive items correctly.
ECSed27174	3	XRP-II: EIN Relocation trx can update records incorrectly.
ECSed27183	4	XRP-II: ILM data import scripts fail to remove temp tar file.
ECSed27184	3	XRP-II: EIN Entry Screen has miscellaneous errors.
ECSed27186	4	XRP-II: License Manager screen--miscellaneous problems.
ECSed27187	4	XRP-II: Adding/deleting records can affect other users' screens.
ECSed27188	3	XRP-II: Generic data retrievals from lic mgnt reports.
ECSed27189	4	XRP-II: Receipt Confirmation processing.
ECSed27191	4	XRP-II: Receiving reports have miscellaneous problems.
ECSed27460	3	XRP Text Field too small
ECSed27541	3	ilm xrp Maintenance Work Order Reports only has three records in it.
ECSed28594	3	XRP-II: Export routines not handling all passwords correctly.
ECSed28664	3	XRP-II: Configured Articles report produces "out of RAM" error.
ECSed29052	3	XRP-II: Copybill feature not working for MWO line items.
ECSed29253	2	XRP-II: Occasionally fails on startup on Sparc 20's.
ECSed29795	3	XRP-II: Inefficiencies in processing need improving.
ECSed27185	4	XRP-II: EIN Manager data entry screen--miscellaneous problems.
ECSed28592	3	XRP-II: Invalid HW/SW Code values being mishandled.
ECSed28631	4	XRP-II: Prompt for Clone Manger reports.

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 Hardware Product Compatibility

There are no identified hardware compatibility issues associated with this product. Product is supported only on the Solaris platform.

5.15.3 Operational Impact

There are no identified operational impacts associated with this product.

5.15.4 Custom Code Impact

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

5.15.5 Licensing Impact

Although license keys are required for product, new keys will not need to be issued unless the product is moved from its current designated hosts.

5.15.6 External Drivers

No external drivers have been identified for this COTS product.

5.15.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.15.8 COTS Installation Sequence/Dependencies

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

5.16 Crack 5.0

5.16.1 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.

5.16.2 Rationale for Upgrade

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

5.16.2.1 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.

5.16.2.2 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 Hardware Product Compatibility

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

5.16.3 Operational Impact

There are no identified operational impacts associated with this product.

5.16.4 Custom Code Impact

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

5.16.5 Licensing Impact

There are no licensing issues with this software.

5.16.6 External Drivers

No external drivers have been identified for this COTS product.

5.16.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.16.8 COTS Installation Sequence/Dependencies

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

5.17 SATAN 1.1.1

5.17.1 Description of COTS

SATAN is a program that gathers network information such the type of machines and services available on these machine as well as potential security flaws.

SATAN gathers information about specified hosts and networks by examining network services (for example, finger, NFS, NIS, ftp, and rexd). It can then report this data in a summary format or, with a simple rule-based system, investigate potential security problems. Problems are described briefly and pointers provided to patches or workarounds. In addition to reporting

vulnerabilities, SATAN gathers general network information (network topology, network services run, types of hardware and software being used on the network).

5.17.2 Rationale for Upgrade

No more recent version of SATAN is available. Recompile for Solaris 8 is targeted.

5.17.2.1 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 and more recent versions become available.

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 Hardware Product Compatibility

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

5.17.3 Operational Impact

There are no identified operational impacts associated with this product.

5.17.4 Custom Code Impact

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

5.17.5 Licensing Impact

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

5.17.6 External Drivers

No external drivers have been identified for this COTS product.

5.17.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.17.8 COTS Installation Sequence/Dependencies

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

5.18 Tripwire 1.3

5.18.1 Description of COTS

Tripwire version 1.3 is a tool that aids in the detection of unauthorized modifications of files resident on SGI systems. It may be executed on an as needed basis. These utility checks 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.

5.18.2 Rationale for Upgrade

Recompile of version 1.3 is planned for Solaris 8 compatibility. No more recent version is available.

5.18.2.1 Vendor Support

Version 1.3 is the most recent freeware version available.

5.18.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.18.2.3 Features/Performance Upgrades

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

5.18.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.18.2.5 Hardware Product Compatibility

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

5.18.3 Operational Impact

There are no identified operational impacts associated with this product.

5.18.4 Custom Code Impact

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

5.18.5 Licensing Impact

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

5.18.6 External Drivers

No external drivers have been identified for this COTS product.

5.18.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.18.8 COTS Installation Sequence/Dependencies

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

5.19 Sybase Open Client 12.0 for Solaris

5.19.1 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

5.19.2 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.

5.19.2.1 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.

5.19.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.19.2.3 Features/Performance Upgrades

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

5.19.2.4 Cross Software Product Compatibility

There are no known software product compatibility issues.

5.19.2.5 Hardware Product Compatibility

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

5.19.3 Operational Impact

There are no identified operational impacts associated with this product.

5.19.4 Custom Code Impact

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

5.19.5 Licensing Impact

There are no licensing issues with this software.

5.19.6 External Drivers

No external drivers have been identified for this COTS product.

5.19.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.19.8 COTS Installation Sequence/Dependencies

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

5.20 Exabyte Driver

5.20.1 Description of COTS

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 the vendor. 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.

5.20.2 Rationale for Upgrade

Product will not be upgraded (replaced) unless it is not compatible and/or ineffective in a Solaris 8 environment. Testing is planned to verify Solaris 8 compatibility.

5.20.2.1 Vendor Support

Vendor has dropped all support and development for Exabyte Driver 3.0.

5.20.2.2 NCRs

No NCRs are identified in association with this COTS product.

5.20.2.3 Features/Performance Upgrades

No additional features or performance upgrades are expected from activity.

5.20.2.4 Cross Software Product Compatibility

Testing task is to verify that there are no known software product compatibility issues.

5.20.2.5 Hardware Product Compatibility

Testing task is to verify that there are no identified hardware compatibility issues associated with this product.

5.20.3 Operational Impact

There are no identified operational impacts associated with this product.

5.20.4 Custom Code Impact

There are no custom code impacts to this upgrade.

5.20.5 Licensing Impact

There are no licensing issues with this software.

5.20.6 External Drivers

No external drivers have been identified for this COTS product.

5.20.7 Other Impacts/Comments

No other impacts have been identified for this COTS product.

5.20.8 COTS Installation Sequence/Dependencies

There are no installation sequences or dependencies associated with this product.

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6. COTS Software Removals

6.1 Proposed COTS Software Removals

In reviewing upgrades and replacements, the following COTS products were identified as candidates for removal from the ECS baseline. These are discussed in the following sections. Also refer to Section 4.19, Remedy/DDTS Replacement for discussion of DDTS removal. HP OpenView was removed as part of the HP Migration.

6.1.1 Proposed DBVision Removal

6.1.1.2 Description of COTS

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.

6.1.1.3 Rationale for Removal

The DDM group reviewed the level 3 and level 4 requirements. 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 has led DDM to recommend removal of the COTS product. The Architect's Office is currently reviewing the recommendation.

6.1.1.4 Operational Impacts

No operational impacts would occur with removal of DBVision.

6.1.1.5 Custom Code Impact

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

6.1.1.6 Conservation of ECS Resources

Removal of the DBVision COTS product, will reduce resources that would be needed to support installation and training related to a new product, the addition of another Systems Management Framework, and Operating System (NT) in the ECS OPS baseline. Procurement of new hardware may also have been necessary to support ManageIT Performance as the DBVision replacement. A DDM analysis identified that no additional features would have been provided by the upgrade and substantial additional resources would be required to support the upgrade.

6.2 Proposed IQ and SQR Report Writer Removal

6.2.1.1 Description of COTS

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.

6.2.1.2 Rationale for Removal

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.

6.2.1.3 Operational Impacts

No operational impacts would occur with removal of one or both Report Writers.

6.2.2 Custom Code Impact

There are no custom code impacts associated with removal of one or both Report Writers.

6.2.3 Conservation of ECS Resources

Removal of one or more Report Writer products, will reduce resources that would be needed to support one or both Report Writer products.

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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
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 upgrade on Sun.	Pre-Sybase ASE 12.0 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		
Sybase ASE for Solaris	11.9.2	12.0	End of Support for 11.9.2 on Sun is identified as occurring on 03/31/2002.	TBD
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 12/31/2001.	TBD
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.	TBD
Sybase Central for Win95	3.0	12.5	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.	TBD

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 Tivoli Server/Client 3.7.x/4.1

7.1.1 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.

7.1.2 Rationale for Upgrade

End of support is the primary upgrade driver.

7.1.3 Vendor Support

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

7.1.4 NCRs

No NCRs are identified in association with this COTS product.

7.1.5 Features/Performance Upgrades

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

7.1.6 Cross Software Product Compatibility

Version 3.7.1 or greater of Management Framework is required for support of Sybase ASE 12.0.

7.1.7 Hardware Product Compatibility

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

7.1.8 Operational Impact

There are no identified operational impacts associated with this product. Upgrade occurring after the Solaris 8 Transition will reduce operational impact at the critical Solaris 8 transition stage.

7.1.9 Custom Code Impact

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

7.1.10 Licensing Impact

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

7.1.11 External Drivers

No external drivers have been identified for this COTS product.

7.1.12 Other Impacts/Comments

No other impacts have been identified for this COTS product.

7.1.13 COTS Installation Sequence/Dependencies

Tivoli upgrade must occur before Sybase ASE 12.0 upgrade for compatibility with this version.

7.2 Sybase ASE 12.0 (Sun) /12.5 (SGI)

7.2.1 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.

7.2.2 Rationale for Upgrade

End of support dates announced by the vendor are the primary upgrade drivers.

7.2.3 Vendor Support

- End of Support for 11.9.3 on SGI is identified as occurring on 12/31/2001.
- End of Support for 11.9.2 on Sun is identified as occurring on 03/31/2002.

7.2.4 NCRs

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

7.2.5 Features/Performance Upgrades

Table 7-2. Sybase ASE 12.0 New Features

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		
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		

7.2.6 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 and 12.0.
DBVision	OPS	3.1.8	Removed from baseline.
DBTools.h++/CT.lib	DEV	4.2	Supports OpenClient 11.1.1 and 12.0
IQ Report Writer	OPS	5.5.01	Targeted for removal.
IRIX	OPS	6.5.6m	Supports ASE 11.9.3; 12.5/OC 12; 12.5
jConnect for SGI/Sun	OSS	5.2	Certified for ASE 12, but not certified for ASE 12.5, although appears to have no immediate problems. Reviewing upgrade to jConnect 5.5, version 5.5 will support ASE 11.5.1 through ASE 12.5.
Remedy ARS Server	OPS	4.5.2	Supports ASE 11.9.2 and 12.0
Solaris 8	OPS	2.8	Supports Sybase ASE 11.9.2, 12.0 & 12.5
SQR (BRIO report)	OPS	4.3.4	Targeted for removal.
SQS (Spatial Query Server)	OPS	3.4.1	Supports OpenClient 11.1.1 & 12
Sybase Central	OPS	12.5	Compatible with Sybase ASE 11.9.2 through 12.5
Sybase Open Client/C for SGI	OPS	12.0.0	12.0 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	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 Enterprise Console 3.7	Supports Sybase ASE 11.9.2 and 12.0 (Solaris Server)

7.2.7 Hardware Product Compatibility

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

7.2.8 Operational Impact

Upgrade will have an operational impact. The PSR will work to mitigate this impact risk.

7.2.9 Custom Code Impact

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

7.2.10 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 12.0 and 12.5. Implementation details are in early planning stages.

7.2.11 External Drivers

No external drivers have been identified for this COTS product.

7.2.12 Other Impacts/Comments

No other impacts have been identified for this COTS product.

7.2.13 COTS Installation Sequence/Dependencies

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

7.3 Sybase Replication Server/Manager 12.1

7.3.1 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.

7.3.2 Rationale for Upgrade

End of support is the primary upgrade driver.

7.3.3 Vendor Support

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

7.3.4 NCRs

No NCRs are identified in association with this COTS product.

7.3.5 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.

7.3.6 Cross Software Product Compatibility

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

7.3.7 Hardware Product Compatibility

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

7.3.8 Operational Impact

There are no identified operational impacts associated with this product.

7.3.9 Custom Code Impact

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

7.3.10 Licensing Impact

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

7.3.11 External Drivers

No external drivers have been identified for this COTS product.

7.3.12 Other Impacts/Comments

No other impacts have been identified for this COTS product.

7.3.13 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.

7.4 Sybase Central 12.5

7.4.1 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.

7.4.2 Rationale for Upgrade

End of support is the primary upgrade driver.

7.4.3 Vendor Support

Current version is at end of support.

7.4.4 NCRs

No NCRs are identified in association with this COTS product.

7.4.5 Features/Performance Upgrades

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

7.4.6 Cross Software Product Compatibility

Sybase Central 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.

7.4.7 Hardware Product Compatibility

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

7.4.8 Operational Impact

There are no identified operational impacts associated with this product.

7.4.9 Custom Code Impact

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

7.4.10 Licensing Impact

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

7.4.11 External Drivers

No external drivers have been identified for this COTS product.

7.4.12 Other Impacts/Comments

No other impacts have been identified for this COTS product.

7.4.13 COTS Installation Sequence/Dependencies

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

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8. COTS Hardware Upgrades

The following COTS hardware products are planned for upgrade. This section identifies the COTS hardware products that will be upgraded and the rationale used to justify this upgrade. Any firmware upgrades, either standalone firmware upgrades, or upgrades associated with a specific hardware upgrade will also be discussed in this section.

Defects for individual hardware items are addressed by a Maintenance Work Order (MWO). Identification of problems, such as performance, features, or other defects that may be related to a class of hardware is usually identified by Operating System or other COTS software NCRs.

8.1 MOD 114/Archive Migration

8.1.1 Description of COTS

The ECS Storage Technology Corporation (STK) Powderhorn archive has been updated from the Redwood SD-3 tape drives to the 9940 tape drives due to the end-of-life of the Redwood SD-3 tape drive and media. The initial 9940 tape drive installation is complete and data migration is in progress. There are two additional purchases of media and drives necessary to meet the F&PRS archive capacity requirements. These procurements will occur in Fiscal Year 2002.

8.1.1.1 Hardware/Software Product Compatibility

AMASS has been upgraded to version 5.0 and ACSLS to version 5.3.2. No additional upgrade is required to utilize the 9940 drives.

8.1.1.2 Features/Performance Upgrades

The SD-3 has a native capacity of 50GB. The 9940 tape native capacity is 60 GB. ECS Capacity Requirements will grow as the earth science data continues to be collected. The projected capacity of is 3382TB.

The SD-3 tape drive is rated at 8.6MB/Sec where the 9940 tape drive is rated at 10MB/Sec.

8.1.2 Software Impact (COTS/Custom)

AMASS 5.0 and ACSLS 5.3.2 COTS upgrades are required for utilization of the 9940 drives. These upgrades have been completed at all sites.

8.1.3 Network Impacts

No network impacts have been identified for this hardware upgrade.

8.1.4 DAAC Facility Impacts

No DAAC Facility impacts are expected.

8.1.5 Transition Impacts

Migration of data from the SD-3 tapes/media to the replacement 9940 drives/media is in progress. The data is scheduled to be totally migrated to the 9940 media by December 2001. All SD-3 drives will be removed from the silos after migration is complete.

8.1.6 External Drivers

No external drivers have been identified for this archive drive replacement.

8.1.7 Other Impacts/Comments

No other impacts have been identified for this archive drive replacement.

8.1.8 COTS Installation Sequence/Dependencies

No other dependencies have been identified for this archive drive replacement.

8.2 Firewall Implementation

8.2.1 Description of COTS

The firewall proposal is 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 SMC/GSFC firewall installation is planned for the end of September 2001. NSIDC firewall targeted for end of October, 2001. The LARC and EDC installations are estimated to begin the end of October, 2001.

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 products will be delivered with the Fire Wall implementation:

- Portus 4.0
- IBM AIX 4.3.3

Based on current testing, an additional COTS product, SOCKS, version 5.0, is planned to be included in the firewall implementation. This COTS product is bundled with the SGI 6.5 Operating System, but has not previously been delivered or installed. If testing validates that

SOCKS 5.0 addresses the issues identified, SOCKS 5.0 will be added to specific servers. These servers are identified and discussed in the Software Impact (COTS/Custom) Section below.

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)

During Firewall testing, it was identified that specific servers (STMGT and INGEST) required a modification to allow outgoing ftp access from ECS. A SOCKS (version 5.0) client for SGI 6.5.x is being tested to validate the product's capability to support this type of access. Custom code modules, EcDsFtpServer and EcPollingIngest, would require this additional IRIX 6.5.x component to be installed as part of the firewall implementation. Installation and configuration of SOCKS 5.0 will be addressed in the Firewall PSR, if testing validates this solution.

8.2.4 Network Impacts

The network impacts will be identified in a Firewall Implementation Plan.

8.2.5 DAAC Facility Impacts

The DAAC facility impacts will be identified in a Firewall Implementation Plan.

8.2.6 Transition Impacts

Firewall Implementation Plan will provide information on operational impacts.

8.2.7 External Drivers

No external drivers have been identified for the Firewall Implementation.

8.2.8 Other Impacts/Comments

No other impacts have been identified for the Firewall Implementation.

8.2.9 COTS Installation Sequence/Dependencies

There are no known dependencies with other COTS HW/SW upgrades besides those identified in the Firewall implementation.

8.3 Software Working Group on Data Science Working Group on Data (SWGDD)

8.3.1 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.

8.3.2 Rationale for Upgrade

SWGDD 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.

8.3.2.1 Hardware/Software Product Compatibility

The TP9400 RAID will be purchased to add additional disk storage for the SGI systems. The TP9400 RAID requires IRIX 6.5.9 to load the RAID management tool. The Science Processors are currently using IRIX 6.5.9 and will only need to have the new RAID management tool added. This software upgrade is discussed in section 4.20, SGI RAID Software Upgrade.

The PDR server is currently using IRIX 6.5.3 and will need an upgrade to IRIX 6.5.9. This is considered a patch level and not a major upgrade.

The SUN D1000 will be purchased for the additional MOPPIT staging disk. This does not require any software upgrades.

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

No equipment end-of-life and/or end-of-support issues are identified with this implementation.

8.2.2.3 Features/Performance Upgrades

The TP9400 RAID supports disks up to 73GB on fiber channel controllers rated up to 400MB/Sec.

Each additional 9940 drive allows up to 10MB/Sec of data transfer rate.

A HiPPI network is planned for NSIDC and BDS for each server for large file transfer. Software Impact (COTS/Custom)

IRIX 6.5.9 is required for all SGI servers hosting a TP9400 RAID. The TPSSM7 software and Java2 1.2.2 is needed for the RAID management. Network Impacts

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.

8.2.3 DAAC Facility Impacts

Additional floor space and power are required to support the hardware.

8.2.4 Transition Impacts

No transition impacts have been identified for this implementation.

8.2.5 External Drivers

Terra production slowdown could cost the user communities to loose funding.

8.2.6 Other Impacts/Comments

No other impacts have been identified with this implementation.

8.2.7 COTS Installation Sequence/Dependencies

The upgrade of IRIX 6.5.9 on the PDR server will follow the IRIX 6.5.9 PSR.

8.4 GSFC SPR Upgrades

8.4.1 Description of COTS

G0spg11 will be added with 12 CPUs to increase the processing an additional 2400 Mflops.

8.4.1.1 Hardware/Software Product Compatibility

There are no identified hardware/software compatibility issues.

8.4.1.2 Equipment End-of-Life/End-of-Support

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

8.4.1.3 Features/Performance Upgrades

The CPU upgrade will increase the processing power from 5120 to 6720 in FY 01. The F&PRS requirements at FY01 are 6400. In early FY02, an Origin 3000 will be installed to add additional processing to move the total Mflops to 9120.

8.4.2 Software Impact (COTS/Custom)

The new system will be configured to the SPR baseline.

8.4.3 Network Impacts

No network impacts have been identified.

8.4.4 DAAC Facility Impacts

Additional floor space and power will be needed to support this server. Sufficient cooling is available.

8.4.5 Transition Impacts

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

8.4.6 External Drivers

No external drivers have been identified for this upgrade.

8.4.7 Other Impacts/Comments

No other impacts have been identified with this upgrade.

8.4.8 COTS Installation Sequence/Dependencies

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

8.5 AIRS Processing and Archive

8.5.1 Description of COTS

The Origin 3800 for Science Processing g0spg11 will be upgraded with 20 500MHz CPUs for AIRS processing. The Queuing server will also be upgraded with additional CPUs to support the additional load. 9940 drives will be added to the archive to store the additional data processed.

8.5.1.1 Hardware/Software Product Compatibility

There are no identified hardware/software compatibility issues.

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

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

8.5.1.3 Features/Performance Upgrades

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

8.5.2 Software Impact (COTS/Custom)

No software impacts have been identified.

8.5.3 Network Impacts

No network impacts have been identified.

8.5.4 DAAC Facility Impacts

There are no DAAC facility impacts associated with this upgrade.

8.5.5 Transition Impacts

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

8.5.6 External Drivers

No external drivers have been identified for this upgrade.

8.5.7 Other Impacts/Comments

No other impacts have been identified with this upgrade.

8.5.8 COTS Installation Sequence/Dependencies

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

8.6 Solaris 8 Hardware Upgrades

8.6.1 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.

8.6.2 Rationale for Upgrade

Upgrades and/or replacements of some Sun machines are needed for Solaris 8 and the Solaris 8 Transition, which as 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.

8.6.2.1 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.

8.6.2.2 Equipment End-of-Life/End-of-Support

Some SPARCstations are at end of support. These issues will be considered in the Solaris 8 hardware analysis currently in progress.

8.6.2.1 Features/Performance Upgrades

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

8.6.3 Software Impact (COTS/Custom)

There will be significant COTS/Custom code impact with the Solaris 8 Transition. Work is in progress to address all the custom code and COTS impacts.

8.6.4 Network Impacts

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

8.6.5 DAAC Facility Impacts

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

8.6.6 Transition Impacts

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

8.6.7 External Drivers

COTS end of life is the driver for the Solaris 8 Transition.

8.6.8 Other Impacts/Comments

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

8.6.9 COTS Installation Sequence/Dependencies

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

8.7 Data Pools SAN (Storage Attached Network)

8.7.1 Description of COTS

The ECS Program has chosen a StorageTek and a SGI solution to integrate a SAN solution for the Data Pool requirements. The requirements are to install 10 TB of storage at GSFC and EDC, 5 TB of storage at LaRC, 3 TB of storage in the PVC and .5 TB of storage at NSIDC. The hardware being procured for this installation is provided in Table 8-1.

Table 8-1. Data Pools SAN Hardware

GSFC and EDC	
Quantity	Description
2	STK 9176 39U RAID Cabinets
1	STK 9176 Disk Controllers
14	STK 9170 Disk Trays
140	72GB Fiber Disk Drives
1	SNF 16 Port FC Switch
1	SUN E450 2/400 MHz Server (Metadata Server)
LaRC	
1	STK 9176 39U RAID Cabinet
1	STK 9176 Disk Controllers
7	STK 9170 Disk Trays
70	72GB Fiber Disk Drives
1	SNF16 Port FC Switch
1	SUN E450 2/400 MHz Server (Metadata Server)
PVC	
1	STK 9176 39U RAID Cabinet
1	STK 9176 Disk Controllers
5	STK 9170 Disk Trays
50	72GB Fiber Disk Drives
1	SNF16 Port FC Switch
1	SUN E450 2/400 MHz Server (Metadata Server)
NSIDC	
8	SGI 72GB Disk Drives

8.7.2.1 Hardware/Software Product Compatibility

The QFS, SANergy and 9175 Data Object Manager COTS products will be needed for the Data Pools SAN implementation. The software is currently certified only for Solaris 7 and above. Therefore delivery will be dependent on Solaris 8 PSR delivery. Refer to Software Impact Section below for additional details.

8.7.2.2 Features/Performance Upgrades

High performance, multi-platform shared file system.

8.7.2.3 Software Impact (COTS/Custom)

COTS software packages will be needed to support the Data Pools SAN architecture. The QFS High Performance File System and multi-platform SANergy clients are needed to support interoperability and performance through a shared network architecture. SANergy enables single file systems to be shared between computers using different operating systems. QFS will run as a Solaris file system. QFS enables multiple hosts to access the same high-performance file system.

The 9175 Data Object Manager software is also bundled with the hardware. Tools supporting data replication, cluster management, and array management are included with the 9175 Data Object Manager.

Installation and delivery is dependent on delivery of Solaris 8 PSR, and PSRs for the QFS 3.5.3.3, SANergy 2.2.20 and 9175 Data Object Manager PSRs. The 9175 Data Object Manager, QFS and SANergy server installation are targeted for Solaris hosts to be procured. SANergy clients will be targeted delivery for all SGIs.

8.7.2 Network Impacts

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

8.7.3 DAAC Facility Impacts

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

8.7.4 Transition Impacts

None—new installation.

8.7.5 External Drivers

No external drivers have been identified.

8.7.6 Other Impacts/Comments

No other impacts have been identified.

8.7.7 COTS Installation Sequence/Dependencies

No other dependencies have been identified for this installation.

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Appendix A. CUT (COTS Upgrade Team) Status Table

Table A-1. CUT Matrix Weekly Update Example

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
glis mapper	NA - New	TBD	EDC EDG compatibility on Sun machines	29683	N/A	N/A	N/A	03/30/2001 04/30/2001	Janine Smith Carlisle/ Willard Selph	N/A	Install as specific in TE documentation.	03/21/2001:PSR date targeted for 04/30/2001.
Purify	4.5.1	5.3 on Sun & SGI	Problems with current version indicated upgrade needed to facilitate development activities.	None	03/06/2001	06/03/2001	07/05/2001 05/22/2001 05/31/2001 06/14/2001 06/19/2001 07/09/2001	07/26/2001 06/07/2001 06/22/2001 06/26/2001 07/17/2001	Rajesh Dharia	N/A	Install when PSR is completed. No other COTS or custom code dependencies. New node-based FLEXIm licensing installation required with this version.	PSR completed on 07/17/2001.
Autosys	3.4.2	3.5	B/L version at end-of-life. Upgrade required for Sybase ASE 11.9.2 compatibility. Upgraded version will migrate to Solaris 8.	None	Jan. 2001 02/15/2001	05/17/2001 06/18/2001	07/20/2001 07/09/2001	08/09/2001 07/24/2001	Rajesh Dharia	A. Wilson	Autosys upgrade must be completed prior to Sybase ASE 11.9.2 upgrade.	07/11/2001: Internal review completed 07/09/2001. DAAC walkthrough targeted for 07/19/2001. PSR is scheduled for 07/24/2001.

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
Tripwire on Sun	1.2	1.3	Consistent version on all platforms. Not high priority.	None	N/A	06/20/2001	07/12/2001	TBD	Pamela Lee	Mike Molinet	Install when PSR is completed. No other COTS or custom code dependencies	07/11/2001: Installation in VATC has been completed. Testing is targeted for completion 07/11/2001. PSR document is being updated.
Secure Shell (SSH)	2.0.13	2.4	Upgrade to correct problems with host-based connections and runaway daemon processes.	ECSe29630; ECSe29631	N/A	04/02/2001 06/20/2001	04/16/2001 TBD	05/07/2001 TBD	Byron Peters	Mike Molinet	Install when PSR is completed. No other COTS or custom code dependencies	07/11/2001: Installation in VATC has been completed. Problems identified being worked.
Legato Networker	5.5.1	6.0 6.0.2	Active support for IRIX 6.5.9m & support for future OS upgrades. Version 6.0 not available prior to IRIX upgrade. End-of-life est. for current version: 09/2001.	None	04/19/2001 04/24/2001	N/A	06/20/2001	07/11/2001	Rajesh Dharia	RTSC	Install when PSR is completed. No other COTS or custom code dependencies.	07/11/2001: Working on adding Solaris 8 install to current document. CCR for Solaris 8 installation in VATC-SMC planned.
NTP (Network Time Protocol) Server for Sun	N/A	4.099k23	Time synchronization mechanism is needed with removal of DCE Time Services.	None	N/A	05/22/2001 06/20/2001 06/26/2001 0717/2001	07/13/2001 07/26/2001 08/02/2001	08/09/2001	Byron Peters	Mike Molinet	Install prior to delivery of 6A_XX. PSR will include instructions on installation and initiating this service.	07/11/2001: NTP installed in PVC VATC 06/20/2001

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
NCDWare	4.1.141	5.1.140	Vendor Support and Solaris 8 support.	None	N/A	N/A	07/16/2001 07/17/2001	08/03/2001 08/07/2001	Rajesh Dharia	N/A	Install when PSR is completed. No other COTS or custom code dependencies.	Internal review completed 07/17/2001. DAAC Walkthrough scheduled for July 31, 2001. PSR targeted for 08/07/2001.
Portus Firewall ES on AIX 4.3.3	N/A	4.0	Security of ECS System	None	N/A	N/A	08/05/2001 08/10/2001	08/14/2001	Byron Peters	Byron Peters	Product will be delivered pre-installed on IBM AIX 4.3.3 machines. PSR will address configuration.	07/11/2001: PVC installation targeted for 7/11/2001. VATC installation targeted to 7/16/2001.
ClearCase	3.2.1	4.1	Version 3.2.1 at End-of-life. 4.x required to support Solaris 8 build environment. Vendor has identified 4.1 will also support IRIX 6.5.2 and beyond.	ECSed30275	N/A	08/01/2001	TBD	TBD	CM POC		Install when PSR is completed. No other COTS or custom code dependencies.	Work on delivery to the DAACs will begin on Aug. 1, 2001 with VATC installation to capture install instructions.

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
Exabyte Driver	1.3	None available	8mm tape driver freeware product unsupported. No Solaris 8 support or upgrade available. Need to verify binary compatibility or seek replacement	None	N/A	N/A	N/A	N/A	Darryl Washington	J. Rattigan	N/A	05/30/2001: Mass Storage COTS IPT plans to evaluate of binary compatibility next week. Sufficient lead time is needed to identify a suitable replacement and/or requirements review if incompatibility is identified. Development using ReelRobot SRI may be an alternative solution if existing driver not compatible.
Forcheck	12.30	12.83	End of Support 12/31/2001. Version will be supported on Solaris 8	None	TBD	TBD	TBD	TBD	Darryl Arrington	A. Wilson	Install when PSR is completed. No other COTS or custom code dependencies.	07/11/2001: Need to gather info from COTS Lead before schedule can be solidified.
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	Required for Rogue Wave & Solaris 8/SGI compatibility.	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD	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
SQS (Spatial Query Server)	3.2.2	3.4.1	Version 3.4 released 11/01/2000. End of Support identified as 03/2002.	ECsed23719; ECsed22897; ECsed21487	02/21/2001	08/21/2001	09/13/2001	09/21/2001	Harold Colglazer	TBD	TBD	07/11/2001: DAAC Walkthrough targeted for 9/20/2001

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
TPSSM7 RAID software for SGI TP9400 RAID Devices	N/A	TBD	New TP9400 RAID requires TPSSM7 software	None	TBD	TBD	TBD	TBD	Sarah Lewallen	TBD	Install when PSR is completed. No other COTS or custom code dependencies.	Upgrade in planning.
StorEdge Volume Manager	2.6	3.0.4	Product at end-of-life. Version not compatible with recent RAID HW. Latest version that will support both 2.5.1 and 8 selected to provide flexibility with transition options.	None	TBD	TBD	TBD	TBD	Sarah Lewallen	J. Rattigan	Install when PSR is completed. No other COTS or custom code dependencies.	05/30/2001: Identified for July through Sept. Rolling Wave. Version in house. Checked in CM Media Library.
Sybase ASE/SQL Monitor	11.5.1	11.9.2 w/EBF 9520 for Sun & 11.9.3 for SGI	Vendor Support on current operating system versions. 11.5.1 will reach end-of-support on 12/31/2000.	ECsed23 295	12/18/2000 12/12/2000	07/10/2001	08/05/2001	08/29/2001 09/11/2001	Rajesh Dharia	S. Ritter	Upgrade to Autosys 3.5 and Tivoli Server Enterprise Console and Framework need to be completed prior to Sybase ASE 11.9.2 upgrade.	07/11/2001: Installation of 11.9.2 on f2pls01 and f2mss01 completed in Functionality Lab. VATC installations being planned. Internal Walkthrough targeted for 9/10/2001.
Acrobat Reader for Solaris/SGI/PC	3.0/2.1	5.0	Support new formats. Version will be supported on Solaris 8.	None	10/01/2001	12/07/2001	12/19/2001	01/18/2002	Rajesh Dharia	TBD	Install when PSR is completed. No other COTS or custom code dependencies.	05/02/2001: Review for availability of 5.0 for PC, Solaris and IRIX.

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
ACSLs	5.3.2 on Solaris 2.6	6.0 on Solaris 8	End-of-Support 10/2001, but supported version 6.0 requires Solaris 7 or 8.	None	TBD	TBD	TBD	TBD	MS ITP	TBD	Install when PSR is completed. No other COTS or custom code dependencies.	06/13/2001: 6.0 not supported on SPARC5s/SPARC20s. HW Engineering in process of procuring Ultra 10s as replacements for Solaris upgrade.
Secure Shell/TCPWrappers	(1.3.7 & 2.4)/7.6	(1.3.7 & 2.4)/7.6	Recompile for Solaris 8	None	10/01/2001	11/01/2001	11/28/2001	12/05/2001	Byron Peters	TBD	Install as identified in Solaris 8 Release Plan.	05/30/2001: Early completion and delivery planned to support ACSLS upgrade.
IDL for PC/SGI/Sun	5.1 (Sun)/5.3 (SGI) /5.3.1 (PC)	5.5	End of support for 5.1 and 5.3 versions/Sun version requires greater than 2.5.1	None	TBD	09/24/2001	10/15/2001	10/22/2001	Rajesh Dharia	TBD	Install on specific operating system as identified in Solaris 8 Release Plan.	05/30/2001: Install on SGI/PC will begin when PSR is released. Solaris version will be installed after Solaris 8 upgrade occurs.
Sybase OpenServer	N/A	12.0	May be added to OPS machines with Dashboard phase 3	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD		05/30/2001: OpenServer is being evaluated for use with Dashboard. Replication Server may be used in place of OpenServer. Decision to be made by Phase 3 of Dashboard.

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
PopChart Image Server/Image Builder	N/A	3.8	May be added to OPS machines with Dashboard phase 3. Could be targeted for M&O LAN/M&O support	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD		05/30/2001: To be added to ECS baseline with Dashboard Phase 3
Apache Server	N/A	1.3.14	May be added to OPS machines with Dashboard phase 3. Could be targeted for M&O LAN/M&O support	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD		05/30/2001: To be added to ECS baseline with Dashboard Phase 3
Jakarta Tomcat	N/A	3.2	May be added to OPS machines with Dashboard phase 3. Could be targeted for M&O LAN/M&O support	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD		05/30/2001: To be added to ECS baseline with Dashboard Phase 3
Jconnect for Solaris	N/A	5.2	May be added to OPS machines with Dashboard phase 3. Could be targeted for M&O LAN/M&O support	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD		05/30/2001: To be added to ECS baseline with Dashboard Phase 3

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
mod_ssl	N/A	2.8.x	May be added to OPS machines with Dashboard phase 3. Could be targeted for M&O LAN/M&O support	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD		05/30/2001: To be added to ECS baseline with Dashboard Phase 3
OpenSSL	N/A	0.9.x	May be added to OPS machines with Dashboard phase 3. Could be targeted for M&O LAN/M&O support	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD		05/30/2001: To be added to ECS baseline with Dashboard Phase 3
MM	N/A	1.1.x	May be added to OPS machines with Dashboard phase 3. Could be targeted for M&O LAN/M&O support	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD		05/30/2001: To be added to ECS baseline with Dashboard Phase 3
PERL	5.005-003	5.6.0	May be added to OPS machines with Dashboard phase 3. Could be targeted for M&O LAN/M&O support	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD		05/30/2001: To be added to ECS baseline with Dashboard Phase 3

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
jre	1.2.1	1.3	May be added to OPS machines with Dashboard phase 3. Could be targeted for M&O LAN/M&O support	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD		05/30/2001: To be added to ECS baseline with Dashboard Phase 3
Visual Workshop for C++/FORTRAN 77 & FORTRAN 90 Compilers	3.0/4.2	Forte 6.1	Required for Rogue Wave & Solaris 8 compatibility.	None	03/20/2001	This task for internal development only.	This task for internal development only.	This task for internal development only.	Rajesh Dharia	N/A	Version planned to be delivered should be installed only after Solaris Upgrade, as specified in the Solaris Upgrade Transition Plan.	07/11/2001: Working on link problem with libc.
Rogue Wave DBTools/Tools/ToolsPro	DBTools 3.1.4 / Tools 7.0b/ ToolsPro 1.1.1	DBTools 4.2 / Tools 7.5/ ToolsPro 1.3	Required for Rogue Wave & Solaris 8 compatibility	ECSed22 454	03/20/2001	NA - delivery only with custom code	NA - delivery only with custom code	N/A: delivered with custom code	Rajesh Dharia	N/A	Delivery with Custom code with Solaris Upgrade	07/11/2001: Negotiations completed. Project will continue with Rogue Wave libraries for Solaris 8. SGI version targeted for availability Sept. 2001.
JAVA SDK for Solaris	1.2.1	1.3 or 1.3.x or 4.0	Required for Solaris 8 compatibility	None	03/20/2001	Tool used only in the EDF	Tool used only in the EDF	N/A: delivered with custom code	Rajesh Dharia	N/A	Delivery with Custom code with Solaris Upgrade	05/02/2001: This development-related task will remain active until full system build is successful.

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
Sybase Open Client for Solaris	11.1.1	12.0 EBF# 9587	Required for Solaris 8 compatibility	None		This task for internal development only.	This task for internal development only.	This task for internal development only.	Rajesh Dharia	N/A	For internal development only	07/11/2001: EFB needs to be downloaded and installed in development environment.
HDF	4.1r3 Solaris 2.5.1 binary	4.1r3 & 5-1.4.1	ECS is moving to support version 5.x by late spring/early summer.	None	03/20/2001	NA - delivery only with custom code	NA - delivery only with custom code	N/A: delivered with custom code	Rajesh Dharia	N/A	Review to identify if current version is binary compatible on Solaris 8	07/11/2001: Problems with recompiling series 4 and series 5 versions on Solaris 8 being worked. Updated code received from NCSA.
TCL/tk	8.0 patch 4	8.3.3	Upgrade when recompiling for Solaris 8	None	07/05/2001	08/31/2001	TBD	TBD	Rajesh Dharia	TBD	Install as identified in Solaris 8 Release Plan.	06/20/2001: Version 8.2.3 will be the targeted upgrade version.
XRP-II/ACCELL DBMS	3.1.3	3.2	New version necessary for Solaris 8	29 NCRs	07/07/2001	11/08/2001	12/18/2001	01/03/2002	Rajesh Dharia	TBD	Install as identified in Solaris 8 Release Plan.	07/11/2001: Vendor has identified that delivery by Aug. 1, 2001 is not probable. Vendor has agreed to provide schedule and probable cost estimates by noon 07/12/2001.
Dashboard COTS	TBD	TBD	Dashboard COTS that will reside on OPS hosts need to be identified and upgrades planned as needed.	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD	Install as identified in Solaris 8 Release Plan.	06/13/2001: In progress of baselining for PVC. Additional research need to be done to identify impact to Solaris upgrade. Pending identification of Solaris upgrades at turnover

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
jConnect for Solaris	5.2	5.2 EBF 9648	If EBF upgrade is not implemented with Dashboard turnover, upgrade will be targeted for Solaris. EBF includes security fix and other patches that are will mitigate risk.	None	10/01/2001	TBD	TBD	TBD	Rajesh Dharia	TBD	TBD	06/27/2001: Currently a Dashboard COTS product. Will review EBF status at turnover.
Disksuite	4.1	4.2.1	Requires upgrade for Solaris 8	None	N/A	N/A	N/A	N/A	Rajesh Dharia	N/A	Will be delivered with Solaris 8 PSR	06/13/2001: Product in use only at EDC. Delivered as part of standard OS install and will not be baselined separately. Upgrade instructions will be provided with transition document. Not planned to be PSRed.
FLEXIm for Sun/SGI	6.1	7.2e or higher	Upgrade will be required for Solaris 8 compilers. Upgrade to the latest version for Sun/SGI planned.	None	TBD	10/16/2001	11/08/2001	11/15/2001	Rajesh Dharia	TBD	Install when PSR is completed. No other COTS or custom code dependencies.	07/11/2001: RTSC reported problems with FLEXIm 7.2e in that an update to the third party COTS product's daemon is required. An earlier version of FLEXIm may be needed.

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
Forte Workshop Compilers (C, C++ & FORTRAN77/90)	Visual Workshop 3.1/FORTRAN77 4.2	6.1 (6 update1)	Required for Solaris 8/RogueWave compatibility	None	TBD	TBD	TBD	08/22/2001	Rajesh Dharia	M. Molinet	Install as identified in Solaris 8 Release Plan.	06/13/2001: FORTRAN90 Compilers need to be delivered for e0acs05, e0acs06, g0acs03, l0acs03, n0acs04, p0acs03, and t1acs03
JetAdmin for Solaris/PC	D.02.13/2.3 .3	Replace with Solaris 8 print services after evaluation.	Support for JetAdmin at end-of life; will be at end of support at upgrade. Need upgrade for Solaris 8 support.	None	N/A - Replacement Planned	Rajesh Dharia	TBD	N/A - Replacement Planned	06/06/2001: RTSC testing Solaris 8 Print Services for replacement. Initial indications are favorable. Will fall back on JetDirect or possibly Web JetAdmin if Solaris Print Services are inadequate.			
jre	1.2.1/1.3 for Dashboard	1.3.1	Upgrade required for Solaris 8	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD	Install as identified in Solaris 8 Release Plan.	07/11/2001: Version 1.3.1 will be targeted for Solaris 8. Needs to be downloaded and copy provided to CM Software Library.
Netscape Communicator	4.7	4.77 or 6.01	Version under review	None	TBD	TBD	08/10/2001	TBD	Rajesh Dharia	TBD	Install as identified in Solaris 8 Release Plan.	06/27/2001: Upgrade planned to 4.77. If Netscape 6.1 or other stable version is released with sufficient lead time to allow for testing and upgrade, upgrade will be targeted for this version because of longer support period.

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
Netscape Enterprise Server (iPlanet Web Server, Enterprise Edition)	3.6	6.0	Vendor Support : 3.6 series End-of-Life 6/2000.	ECSed25653; ECSed25270; ECSed26377	TBD	12/19/2001	01/18/2002	01/25/2002	Rajesh Dharia	TBD	Install as identified in Solaris 8 Release Plan.	06/20/2001: Version 6.0 is now out of beta, and has been officially released. Order for CDs has been requested.
PERL	5.005-03	TBD	Recompile for Solaris 8/Include Perl for tk module	None	07/16/2001	08/20/2001	10/15/2001	10/22/2001	Rajesh Dharia	TBD	Install as identified in Solaris 8 Release Plan.	06/13/2001: Version to be identified.
Sybase OpenClient	11.1.1	12.0 for Sun EBF9587	End-of-Support	None	Oct-Nov. 2001	TBD	TBD	TBD	Rajesh Dharia	M. Molinet	TBD	Sybase OpenClient EBF #9587 has been downloaded and provided to CM Software Librarian.
Sendmail/Na med (bind)	8.8.8+/4.9.3	8.11.2 or later/9.1 or later	Security Group recommends the most current versions available	None	08/03/2001	10/23/2001	11/13/2001	11/20/2001	Byron Peters	TBD	Install as identified in Solaris 8 Release Plan.	06/13/2001: Commercial version identified. Product/cost being reviewed by Security group.
Solaris	2.5.1	Solaris 8 Update 04/01	Solaris 2.5.1 is at end-of-life as of 09/2000. Sun and third-party vendors dropping support in current versions.	None	TBD	10/18/2001	12/03/2001	12/10/2001	Kevin Lange/Rajesh Dharia	M. Molinet	Install as identified in Solaris 8 Release Plan.	07/11/2001: RTSC will review the 07/01 Solaris 8 CD for baselining. Currently targeting the 04/01 CD release.

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
Tivoli Client & Server	3.6.3/3.6.2/3.6	Framework 3.7.1 TEC 3.7 SW.Dist. 4.1 Distr. Mon. 3.7	End-of-Support expected by end of year. Upgrade required for Solaris 8.	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD	Install as identified in Solaris 8 Release Plan.	07/11/2001: All CDs received for Solaris. Tier 2 CDs are also needed for SGI for Software Distribution and Framework. Tier 2 Software Distribution CD has been ordered. Availability of Tier 2 Framework versions being worked by Alex Schuster.
Crack	4.1	5	Recompile needed for Solaris 8	None	10/01/2001	11/01/2001	11/28/2001	12/05/2001	Byron Peters	TBD	Install as identified in Solaris 8 Release Plan.	06/20/2001: Upgrade and recompile needed for Solaris 8.
SATAN	1.1.1	1.1.1	Recompile needed for Solaris 8	None	10/01/2001	11/01/2001	11/28/2001	12/05/2001	Byron Peters	TBD	Install as identified in Solaris 8 Release Plan.	06/27/2001: Recompile for Solaris 8 needed.
Tripwire on Sun	1.3	1.3	Recompile needed for Solaris 8	None	10/01/2001	11/01/2001	11/28/2001	12/05/2001	Byron Peters	TBD	Install when PSR is completed. No other COTS or custom code dependencies	06/20/2001: Recompile for Solaris 8 needed.
Remedy	3.2.1	4.5.2	Upgrade required for Solaris 8	None	10/01/2001	01/04/2002	01/18/2002	01/25/2002	Rajesh Dharia	TBD	Install as identified in Solaris 8 Release Plan.	06/13/2001: Upgrade to this version planned as part of the Solaris 8 upgrade at the DAACs.

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
LoadRunner/Xrunner	6.0/6.0	6.5/6.0	Solaris 8	None	N/A	TBD	TBD	TBD	Maryellen Corbett	TBD		06/20/2001: Need to work issue on whether to upgrade or remove from baseline. No longer used in EDF. DAAC usage TBD.
Remedy Upgrade/DDTS Replacement	3.2.1	4.5.2	To consolidate Trouble Ticketing/NCR reporting in a single system, reducing cost and resource requirements for upgrading 2 COTS Trouble Ticketing products.	None	Release 1 Design is slated to start 07/03/01.	Release 1 Development is slated to start 08/17/01.	TBD	TBD	Ben Floyd	S. Ritter	Installation of 4.5.2 version at the DAACs is not planned until the Solaris 8 upgrade. Current DAAC versions will communicate with upgraded version at the EDF via e-mail until upgrade.	07/11/2001: The Remedy/DDTS Replacement IPT is currently finalizing Release 1 Remedy requirements and has also initiated the design of Remedy forms. Release 1 Remedy development is slated to start 08/17/01.
Anlpassword Replacement	2.3	TBD	Corruption problem with Anlpassword 2.3	None	TBD	TBD	TBD	TBD	Byron Peters	Byron Peters	TBD	06/27/2001: Planning is awaiting response to NPG 2810-1 (Security of Information Technology) submission. A supported COTS product is preferred to unsupported freeware. Capabilities included in this submission could possibly replace this freeware product.

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
jConnect for SGI	5.2	5.2 w/EBF# 9648	EBF #9648 includes patches that should be added/upgraded when schedule permits.	None	TBD	TBD	TBD	TBD	Guy Swope	TBD	TBD	06/27/2001 Alert review identified that EBF 9648 has patches/fixes that should be added/upgraded as schedule permits.
Sybase ASE	11.9.2 (Sun)/11.9.3 (SGI)	12.0(Sun)/12.5 (SGI)	End-of-Support	None	Oct-Nov. 2001	TBD	TBD	TBD	Rajesh Dharia	TBD	TBD	
Sybase Central	3.0	12.0	End-of-Support	None	Oct-Nov. 2001	TBD	TBD	TBD	Rajesh Dharia	TBD	TBD	
Sybase Replication Server	11.5.1	12.1	End-of-Support	None	Oct-Nov. 2001	TBD	TBD	TBD	Rajesh Dharia	TBD	TBD	
Netscape Communicator	4.7.x	6.01	End-of-Support	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD	TBD	
Oracle Enterprise 8i	8.1.6	8.1.7 or migration to Sybase	Upgrade to 8.1.7 or migration to Sybase may be needed.	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD	TBD	

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
ClearCase	4.1	TBD	End-of-Support 11/01/2002	None	TBD	TBD	TBD	TBD	Rajesh Dharia	TBD	TBD	
DBVision replacement product evaluation	DBVision 3.1.8	Managet Performance 4.3	CA has announce that DBVision version supporting Solaris 8 and Sybase 12 will not be available for product. Replacement/mig ration product is Managet Performance.	None	Being reviewed for removal	Rajesh Dharia	N/A	TBD	05/23/2001: Recommended for removal. Requirements review in progress.			
DDTS	4.1	4.6	Vendor Support - end of life est. to be 4/01/2000	None	Being reviewed for removal	Rajesh Dharia	N/A	TBD	11/22/2000: Upgrade planning delayed until approval of M&O Remedy/DDTS initiative & schedule are available. 4.6 supports 2.5.1 through Solaris 8.			

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Assoc. NCRs	Dev. Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Current COTS POC	Testing POC	Installation Comments	Status (Date) as of 07/18/2001 (unless otherwise noted)
IQ	5.5.0.1	6.0	Product at end-of-life/best effort support. Upgrade will support current and future OpenClient/ASE versions through 12. Version is supported on Solaris 8.	None	Being reviewed for removal	Rajesh Dharia	N/A	TBD	05/23/2001: Recommended for removal. Requirements review in progress.			
SQR (Brio Report)	4.3.4	6.1.3	Product at end-of-life/best effort support. Upgrade will support current and future OpenClient/ASE versions through 12. Version is supported on Solaris 8.	None	Being reviewed for removal	Rajesh Dharia	N/A	TBD	05/23/2001: Recommended for removal. Requirements review in progress.			

Appendix B. COTS Compatibility Matrix

Table B -1. Targeted Solaris 8 Baseline As Generated from Compatibility Matrix

Product	Deploy.	Pre-Solaris 8 version	Future Version	Availability Date	Targeted for Release	Rationale for Upgrade
Acrobat Reader for Solaris	OPS	3	5	TBD (only windows/mac)	S8	Support new formats. Version will be supported on Solaris 8.
ACSLs	OPS	5.3.2	6	Current	S9	End-of-Support 10/2001, but supported version 6.0 requires Solaris 7 or 8.
Anlpassword	OPS	2.3	Replacement	N/A	Dependent on replacement product	Corruption problem with Anlpassword 2.3
AutoSys Remote Agent for Sun	OPS	3.4.2	3.5	Current	6X	B/L version at end-of-life. Upgrade required for Sybase ASE 11.9.2 compatibility. Upgraded version will migrate to Solaris 8.
AutoSys Server	OPS	3.4.2	3.5	Current	6X	B/L version at end-of-life. Upgrade required for Sybase ASE 11.9.2 compatibility. Upgraded version will migrate to Solaris 8.
AutoSys Xpert	OPS	3.4.2	3.5	Current	6X	B/L version at end-of-life. Upgrade required for Sybase ASE 11.9.2 compatibility. Upgraded version will migrate to Solaris 8.
bind	OPS	4.9.3	9.1.2	Current	S8	Security Group recommends the most current versions available
BuilderXcessory	DEV	5.03	5.08	Current	Dev. Only	Required for Solaris 8 Motif compatibility - Motif version change in Solaris 8.
BuilderXcessory Epak/GraphPak	DEV	3	3.0.4	Current	Dev. Only	Required for Solaris 8 Motif compatibility - Motif version change in Solaris 8.

Product	Deploy.	Pre-Solaris 8 version	Future Version	Availability Date	Targeted for Release	Rationale for Upgrade
ClearCase	OPS	3.2.1	4.1	Current	6X	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.
Crack	OPS	4.1	5	Current	S8	Recompile needed for Solaris 8
DB Vision	OPS	3.1.8	Removal	Current	Removed	Recommended removal; other products meet requirements
DBTools.h++/CT.lib	DEV	3.1.4	4.2	Current	Dev. Only	Required for Rogue Wave & Solaris 8 compatibility.
DDTS	OPS	4.1	4.7 or Removal	05/2001	S8 or removal	Planned replacement by Remedy
Disksuite	OPS	4.1	4.2.1	Current	S8	Upgrade needed for Solaris 8; primarily for EDF
Exabyte Driver	OPS	1.3	n/a	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
FIND_DDOS	OPS	3.3	4.2	Current	S8	Binary version for Solaris 8 needs to be identified and/or tested
FLEXIm	OPS	6.1	7.2f	Current	6X	Upgrade will be required for Solaris 8 compilers. Upgrade to the latest version for Sun/SGI planned.
Forcheck	OPS	12.3	12.83	Current	6X	End of Support 12/31/2001. Version will be supported on Solaris 8
GhostView	OPS	1.5	None	N/A	S8	Recompile for Solaris 8 compatibility
GNU Unzip	OPS	1.2.4	None	N/A	S8	Same version bundled with Solaris 8

Product	Deploy.	Pre-Solaris 8 version	Future Version	Availability Date	Targeted for Release	Rationale for Upgrade
GNU Zip	OPS	1.2.4	None	N/A	S8	Same version bundled with Solaris 8
HDF Libraries	DEV	4.1r3	5-1.4.1 & 4.1r3	Current	Dev. Only	
IDL for Solaris	OPS	5.1	5.5	3Q2001	S8	End of support for 5.1 and 5.3 versions/Sun version requires greater than 2.5.1
IQ Report Writer (Vision IQ)	OPS	5.5.01	removal ?	3Q2001	S8 or removal	Recommended removal; other products meet requirements
Java Runtime Environment for Sun	OPS	1.2.1	1.4	Beta	S8	Required for Solaris 8 compatibility
JetAdmin for Sun	OPS	d.02.10	JetDirect	Current	S8	Support for JetAdmin at end-of life; will be at end of support at upgrade. Need upgrade for Solaris 8 support.
Jprobe Server Side Suite	DEV	2.5	3	06/2001	Dev. Only	
Legato Networker Client	OPS	5.5.1	6.0.2	Current	6X	Active support for IRIX 6.5.9m & support for future OS upgrades. Version 6.0 not available prior to IRIX upgrade. End-of-life est. for current version: 09/2001.
Legato Networker Server	OPS	5.5.1	6.0.2	Current	6X	Active support for IRIX 6.5.9m & support for future OS upgrades. Version 6.0 not available prior to IRIX upgrade. End-of-life est. for current version: 09/2001.
NCDware	OPS	4.1.141	5.1.140	Current	6X	Vendor Support and Solaris 8 support.
Netscape Communicator	OPS	4.7	4.77	Current	S8	Version under review
Netscape Enterprise Server	OPS	3.6	6	Current	S8	Vendor Support : 3.6 series End-of-Life 6/2000.

Product	Deploy.	Pre-Solaris 8 version	Future Version	Availability Date	Targeted for Release	Rationale for Upgrade
PERL	OPS	5.005-03	5.6.1	Current	S8	Recompile for Solaris 8/Include Perl for tk module/version under discussion
Purify for Sun	OPS	4.5.1	5.3	Current	6X	Problems with current version indicated upgrade needed to facilitate development activities. 5.3 will support Solaris 2.5.1/Solaris 8/IRIX 6.5.6 +/64-bit support
Remedy ARS Client	OPS	3.2.1	4.5.2	Current	S8	Upgrade required for Solaris 8/To consolidate Trouble Ticketing/NCR reporting in a single system, reducing cost and resource requirements for upgrading 2 COTS Trouble Ticketing products.
Remedy ARS Server	OPS	3.2.1	4.5.2	Current	S8	Upgrade required for Solaris 8/To consolidate Trouble Ticketing/NCR reporting in a single system, reducing cost and resource requirements for upgrading 2 COTS Trouble Ticketing products.
SATAN	OPS	1.1.1	None	Current	S8	Recompile needed for Solaris 8
sendmail	OPS	8.8.8+	8.11.4	Current	S8	Security Group recommends the most current versions available
Solaris	OPS	2.5.1	8 04/01	Current	S8	Solaris 2.5.1 is at end-of-life as of 09/2000. Sun and third-party vendors dropping support in current versions.
Solaris (for ACSLS)	OPS	2.6	8 04/01	Current	S8	Support for ACSLS 6.0. Return hosts to baselined OS.
SPARCompiler C	OPS	4.2	Forte 6.1	Current	S8	Required for Solaris 8
SPARCompiler C++	OPS	4.2	Forte 6.1	Current	S8	Required for Solaris 8/RogueWave compatibility

Product	Deploy.	Pre-Solaris 8 version	Future Version	Availability Date	Targeted for Release	Rationale for Upgrade
SPARCompiler Fortran 77	OPS	4.2	Forte 6.1 f77 & f95 (f90)	Current	S8	Required for Solaris 8
SQR (BRIO report)	OPS	4.3.4	6.1.3	Current	S8 or removal	Recommended removal; other products meet requirements
ssh secure shell commercial (UNIX) Level 1	OPS	1.3.7	1.3.7	No announced availability	S8	Recompile for Solaris 8 compatibility
ssh secure shell commercial (UNIX) Level 2	OPS	2.0.13	2.4	Current	S8	Recompile for Solaris 8 compatibility
StorEdge Volume Manager	OPS	2.6	3.0.4	Current	6X	Product at end-of-life. Version not compatible with recent RAID HW. Latest version that will support both 2.5.1 and 8 selected to provide flexibility with transition options.
Sybase ASE	OPS	11.5.1.2	11.9.2	Current	Post S8	Vendor Support on current operating system versions.
Sybase ASE SQL Server Monitor	OPS	11.5.1	11.9.2	Current	Post S8	Vendor Support on current operating system versions.
Sybase Open Client/C for Sun	OPS	11.1.1	12.0.0	Current	S8	Vendor Support for version
TCL/Tk	OPS	8.0 patch 4	8.3.3	Current	S8	Recompile for Solaris 8/upgrade recommended
TCPWrappers	OPS	7.6	None	n/a	S8	Recompile for Solaris 8 compatibility/no upgrade available.
Tivoli Client: Distributed Monitoring	OPS	3.6	3.6.2	No announced release date	S8	End-of-Support expected by end of year. Upgrade required for Solaris 8.
Tivoli Client: Enterprise Console	OPS	3.6.2	3.6.2	Current	S8	End-of-Support expected by end of year. Upgrade required for Solaris 8.
Tivoli Client: Management Framework	OPS	3.6.3	3.6.3	Current	S8	End-of-Support expected by end of year. Upgrade required for Solaris 8.

Product	Deploy.	Pre-Solaris 8 version	Future Version	Availability Date	Targeted for Release	Rationale for Upgrade
Tivoli Client: Software Distribution	OPS	3.6	3.6.2	Current	S8	End-of-Support expected by end of year. Upgrade required for Solaris 8.
Tivoli Server: Distributed Monitoring	OPS	3.6	3.6.2	No announced availability date	S8	End-of-Support expected by end of year. Upgrade required for Solaris 8.
Tivoli Server: Enterprise Console	OPS	3.6.2	3.6.2	Current	S8	End-of-Support expected by end of year. Upgrade required for Solaris 8.
Tivoli Server: Management Framework	OPS	3.6.3	3.6.3	Current	S8	End-of-Support expected by end of year. Upgrade required for Solaris 8.
Tivoli Server: Software Distribution	OPS	3.6	3.6.2	Current	S8	End-of-Support expected by end of year. Upgrade required for Solaris 8.
Tools.h++	DEV	7.0b	7.5	Current Sun/08/31/2001 SGI	Dev. Only	Required for Rogue Wave & Solaris 8 compatibility.
Tools.Pro.h++	DEV	1.1.1	1.2.2	Current Sun/	Dev. Only	Required for Rogue Wave & Solaris 8 compatibility.
Tripwire for Solaris	OPS	1.2	1.3	Current	S8 or replace	Recompile needed for Solaris 8
Visual Workshop for C++	OPS	3	6.1	Current	TBD	Required for Solaris 8
XRP Accell	OPS	2.0.7.2.0	6.5AC	Current	S8	New version may necessary for Solaris 8
XRP-II	OPS	3.1.3	3.2	TBD	S8	New version necessary for Solaris 8
XVT DSC	DEV	4.58	5.1	Current	Dev. Only	