



**UK IT SECURITY EVALUATION AND
CERTIFICATION SCHEME**



122-B

**ASSURANCE MAINTENANCE STATUS SUMMARY
(supplementing Certification Report No. P170)**

Sun Microsystems, Inc. Trusted Solaris™

Version 84/01 Derivatives (to Version 8 HW 7/03)

Issue 2.0

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United Kingdom

EAL4
augmented by ALC_FLR.3
LSPP, CAPP and RBACPP

Sun Microsystems Trusted Solaris
Version 8 4/01 Derivatives (to Version 8 HW 7/03)

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ABBREVIATIONS

AMA	Maintenance of Assurance Class
CCRA	Common Criteria Recognition Arrangement
CC	Common Criteria
CLEF	Commercial Evaluation Facility
CMS	Certificate Maintenance Scheme
DSA	Developer Security Analyst
EAL	Evaluation Assurance Level
OBP	OpenBoot PROM
OBPSC	OpenBoot PROM System Controller
SC	System Controller
TOE	Target of Evaluation
TSP	TOE Security Policy
UKSP	United Kingdom Scheme Publication

REFERENCES

- a. Common Criteria Certification Report No. P170, Sun Microsystems Inc., Trusted Solaris Version 8 4/01, UK IT Security Evaluation and Certification Scheme, Issue 3.0, March 2004.
- b. Trusted Solaris 8 4/01 Security Target, Sun Microsystems Inc., TS8_101, Issue 3.1, 12 November 2003.
- c. Arrangement on the Recognition of Common Criteria Certificates in the Field of Information Technology Security, Members of the Agreement Group, May 2000.
- d. UK Certificate Maintenance Scheme, Part I, Description of the CMS, UK IT Security Evaluation and Certification Scheme, UKSP 16, Issue 1.0, 31 July 1996.
- e. UK Certificate Maintenance Scheme, Part II, Impact Analysis and Evaluation Methodology, UK IT Security Evaluation and Certification Scheme, UKSP 16, Issue 1.0, 31 July 1996.
- f. UKSP 16 Addendum: Interim Guidance for CC TOEs, UK IT Security Evaluation and Certification Scheme, UKSP 16, Issue 1.0, January 2000.
- g. Common Criteria Part 3, Common Criteria Interpretations Management Board, CCIMB-99-033, Version 2.1, August 1999.
- h. Task LFL/T154 Certificate Maintenance Audit Report, LogicaCMG CLEF, 309.EC28851:30.1.2, Issue 0.2, 1 September 2003.
- i. Task LFL/T154 Certificate Maintenance Audit Report 2, LogicaCMG CLEF, 310.EC200582:30.1.2, Issue 1.0, 28 January 2004.

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I. INTRODUCTION

Introduction

1. This summary outlines the current status of the UK assurance maintenance process for the Trusted Solaris 8 4/01 derivative s (to Trusted Solaris 8 HW 7/03), and is intended to assist prospective consumers when judging the suitability of the IT security of the derivative s for their particular requirements.
2. The baseline for assurance maintenance was the Common Criteria (CC) evaluation, to the EAL4 Evaluation Assurance Level, of Trusted Solaris 8 4/01. The Developer's flaw remediation procedures have also been subsequently evaluated in accordance with the CC ALC_FLR.3 evaluation requirements.
3. Prospective consumers are advised to read this document in conjunction with both:
 - the Certification Report [Reference a] for the EAL4 and ALC_FLR.3 evaluation; and
 - the Security Target [b] which specifies the functional, environmental and assurance requirements for the evaluation and assurance maintenance.

Assurance Maintained Derivative

4. The version of the product originally evaluated was:
 - Trusted Solaris 8 4/01.
5. The versions of the product for which assurance has subsequently been maintained are:
 - Trusted Solaris 8 HW 12/02 (also known as Trusted Solaris 8 12/02); and
 - Trusted Solaris 8 HW 7/03 (also known as Trusted Solaris 8 7/03).
6. Note that the assurance maintenance process has been primarily targetted at the above two versions of Trusted Solaris 8. Each of these versions incorporated a number of previously released patches and the assurance maintenance process addressed the issue of these patches prior to their consolidation into the above two versions as discussed below in Sections II and III.
7. Note that for the above derivatives, the scope of the Target of Evaluation (TOE) functionality remains unchanged from that defined in the Security Target [b], although there have been some minor changes to the product and different hardware platforms are used.

Status of Maintenance Results

8. Assurance maintenance involves a process whereby a Developer Security Analyst (DSA) performs an analysis of the security impact of changes to the product, affirms that these changes do not undermine the security of the product, affirms that the changes are not of sufficient significance to warrant a Commercial Evaluation Facility (CLEF) re-evaluation and maintains product and process documentation. The work of the DSA is periodically audited by the CLEF.

9. The evaluation of Trusted Solaris 8 4/01 was conducted in accordance with the terms of the CC Recognition Arrangement (CCRA) [c], and the evaluation of flaw remediation procedures was conducted in accordance with a working agreement amongst the parties to the arrangement (pending formal extension of CCRA). These agreements are based on evaluation by a CLEF using common evaluation methodology agreed by the CCRA parties.

10. A common methodology for assurance maintenance had not been agreed at the time of the activities covered by this summary, and CCRA did not extend to assurance maintenance. The UK assurance maintenance process is thus based on an interim UK methodology comprising United Kingdom Scheme Publication 16 (UKSP 16) [d, e] and the UKSP 16 Addendum for CC TOEs [f]. The UK IT Security Evaluation and Certification Scheme considers this methodology appropriate for use with the CC Part 3 [g] AMA criteria.

Assurance Maintenance Audit Schedule

11. The schedule of completed assurance maintenance audits is detailed in table 1 below.

Schedule	Date Completed	Auditors
Assurance Maintenance Audit No. 1	August 2003	LogicaCMG CLEF
Assurance Maintenance Audit No. 2	January 2004	LogicaCMG CLEF

Table 1: Assurance Maintenance Audit Schedule

Assurance Maintenance Audit Results

12. After due consideration of the Audit Reports [h, i] produced by the LogicaCMG CLEF and other visibility of the assurance maintenance process given to the Certifier, the Certification Body has determined that EAL4 assurance has been maintained for the derivatives to Trusted Solaris 8 HW 7/03.

13. The ALC_FLR.3 evaluation was conducted concurrently with Assurance Maintenance Audit No 2.

General Points

14. Assurance maintenance addresses the security functionality claimed in the Security Target [b] with reference to the assumed operating environment specified by the Security Target. The assurance-maintained configurations are as specified by the derivative modifications specified in the following chapters in conjunction with the Certification Report [a]. Prospective consumers are advised to check that this matches their identified requirements.

15. The assurance maintenance process is not a guarantee of freedom from security vulnerabilities; there remains a small probability (smaller with greater assurance) that exploitable vulnerabilities may be discovered after an assurance maintenance audit has been completed. Consumers (both prospective and existing) should check regularly for themselves whether any security vulnerabilities have been discovered since this document was issued and, if appropriate,

should check with the Vendor to see if any patches exist for the product and whether such patches have been:

- applied in accordance with the evaluated flaw remediation procedures,
- incorporated into a later assurance maintained derivative, or
- evaluated and certified.

Assurance-maintained Derivative Changes

16. The following chapters give information of relevance to consumers for the assurance maintained derivatives, particularly where this differs from that supplied in the Certification Report for Trusted Solaris 8 4/01 [a].

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II. Trusted Solaris 8 HW 12/02

17. Trusted Solaris 8 HW 12/02 exhibits the following types of change from Trusted Solaris 8 4/01:

- a) Bug fixes (including some changes to TSP-enforcing code);
- b) Variations to administrative interfaces, including:
 - Improvements to the 'praudit' audit token;
 - Minor changes to CDE features and the location of the style manager; and
- c) Additional device drivers for further hardware platforms.

Security Target

18. There have been no changes to the assurance or functionality requirements under assurance maintenance, but new hardware platforms have been added as noted below under 'Testing and Hardware Platforms' (a separate, formal evaluation process was followed to address the ALC_FLR.3 augmentation introduced for Issue 3.1 of the Security Target [b]).

Product Identifiers

19. The Trusted Solaris 8 HW 12/02 operating system is provided on the following CD sets:

- For SPARC platforms:
CD Part No.s 705-0665-10 and 705-0666-10, May 2003.
- For Intel and AMD platforms:
CD Part No.s 705-0670-10 and 705-0669-10, May 2003.

20. The Trusted Solaris 8 HW 12/02 AnswerBook CD is:

CD Part No. 705-0662-10, May 2003.

Delivery Procedures

21. There have been no changes under assurance maintenance. All software and documentation for assurance maintained derivatives are available on CD.

Installation and Guidance Documentation

22. The following documents have been updated. All are included on the AnswerBook CD specified above under 'Product Identifiers'. The 'Reference Manuals' are also included on the operating system CDs.

- Trusted Solaris 8 HW 12/02 Release Notes,
Part No. 817-0877-10, May 2003.
(updated for Trusted Solaris 8 HW 12/02)

- Trusted Solaris 8 HW 12/02 Transition Guide,
Part No. 817-0878-10, May 2003.
(outlining differences between Trusted Solaris 8 4/01 and Trusted Solaris 8 HW12/02)
 - Trusted Solaris Reference Manuals (volumes 1 to 4¹, which include some updated man pages), comprising:
 - Part No. 817-0879-10 (section 1), May 2003
 - Part No. 817-0880-10 (section 1M), May 2003
 - Part No. 817-0881-10 (section 2), May 2003
 - Part No. 817-0882-10 (section 3), May 2003
 - Part No. 817-0883-10 (section 4), May 2003
 - Trusted Solaris 8 HW 12/02 Roadmap,
Part No. 817-1392-10, May 2003.
(updated to reflect the above document changes)
23. The Trusted Solaris 8 4/01 versions of other installation and guidance documents specified in the Trusted Solaris 8 4/01 Certification Report [a] remain current for Trusted Solaris 8 HW 12/02.

Testing and Hardware Platforms

24. The Developer's testing was performed using both an automated test suite and additional manual tests. These tests included:
- The automated test suite run by the Developer for the Trusted Solaris 8 4/01 evaluation;
 - The manual tests performed by the Developer for the Trusted Solaris 8 4/01 evaluation;
 - The additional functional tests and penetration tests performed by the Evaluators for the Trusted Solaris 8 4/01 evaluation; and
 - Additional tests formulated by the Developer to exercise patches incorporated in Trusted Solaris 8 HW 12/02.

¹ In accordance with the original certification [a], volumes 1 to 4 are used most frequently and were found to contain sufficient information for the evaluated and assurance maintained security functionality.

25. The above Developer testing was performed on all of the hardware platforms listed in table 2 below. The single processor AMD Athlon machine was used as NFS server and NIS+ master wherever such functionality was required.

Platform	Processor and Memory	Hard Drive	Notes (para 29)
Sun Blade 100	500 MHz UltraSPARC IIe cpu, 512 Mb memory	15 Gb	
SunBlade 1000 Model 2750	2 x 750 MHz UltraSPARC III cpu, 2 Gb memory	36 Gb	
SunBlade 2000	2 x 900 MHz UltraSPARC III cpu, 2048 Mb memory	73 Gb	(1)
Enterprise 420R	2 x 450 MHz UltraSPARC II cpu, 2 Gb memory	2 x 18 Gb	
SunFire V480	4 x 900 MHz UltraSPARC III cpu, 8192 Mb memory	2 x 36 Gb	(1)
SunFire V880	4 x 900 MHz UltraSPARC III cpu, 8192 Mb memory	6 x 73 Gb	(1)(2)
SunFire 3800	1 board, comprising: 4 x 900MHz UltraSPARC III cpu, 8 Gb memory and 1 board, comprising: 4 x 750 MHz UltraSPARC III cpu, 4 Gb memory	2 x 9 Gb	(1)(2)
Intel P3	450 MHz Intel Pentium 3 cpu, 128 Mb memory	9 Gb & 14 Gb	
Intel P3	2 x 450 MHz Intel Pentium 3 cpu, 128 Mb memory	9 Gb & 14 Gb	
Intel P4	2.4 GHz Intel Pentium P4 cpu, 512 Mb memory	60 Gb	(1)
Intel Xeon	2 x 2.4 GHz Intel Xeon MP cpu, 1024 Mb memory	60 GB	(1)
AMD Athlon	2.4 GHz AMD Athlon cpu, 512 Mb memory	60 Gb	(1)
AMD Athlon	2 x 2200 MHz AMD Athlon cpu, 512 Mb memory	60 Gb	(1)(2)

Table 2: TSol8 HW 12/02 Test Platforms

26. The Developer additionally performed multi-platform analyses to demonstrate that the relevant machines above were representative of the families given in table 3 below, with respect to the claims of the Security Target [b] for the operation of Trusted Solaris 8 HW 12/02 on such hardware platforms. Note that:

- a) In the case of the SunFire 280R family the multi-platform rationale demonstrated equivalence with the SunBlade 1000 hardware platform. The latter thus represented the 'relevant' machine in this case.
- b) A minimum memory of 256 Mb (to support administrator SMC requests on NFS server, NIS+ master workstations) or 128 Mb (on client workstations) and a minimum hard disk size of 2 Gb are recommended. There is a risk (which is more significant nearer these limits) that lower processor speeds, memory sizes or hard disk sizes than those tested may introduce performance degradation problems.

Family	Processor Options	Memory Options	Hard Drive Options
SunFire 280R	2 x 750 MHz, 900 MHz, 1015 MHz or 1200 MHz UltraSPARC III cpu	From recommended minimum to 8 Gb	From recommended minimum to 146 Gb
SunFire V480	1 or 2 boards, each comprising 1 or 2 x 900MHz UltraSPARC III cpu	From recommended minimum to 32 Gb	From recommended minimum to 146 Gb
SunFire V880	1 or 2 boards, each comprising from 1 to 4 x 750, 900 or 1050 MHz UltraSPARC III cpu	From recommended minimum to 64 Gb	From recommended minimum to 876 Gb
SunFire 3800	1 or 2 boards, each comprising from 1 to 4 x 750, 900, 1050 or 1200 MHz UltraSPARC III cpu	From recommended minimum to 64 Gb	From recommended minimum to 35 Tb

Table 3: TSol8 HW 12/02 Platform Ranges Covered by Analysis

27. The assurance maintenance process did not specifically address the versions of the OpenBoot PROMs (OBPs) available for the SPARC machines (or the System Controller (SC) board which provides a similar bootstrapping facility for the SunFire 3800 machine).

28. During Assurance Maintenance Audit No. 1 the Evaluators examined the Developer test records and confirmed that there was suitable evidence of security testing for Trusted Solaris 8 HW 12/02 on the above hardware platforms.

29. To confirm the adequacy of Developer Testing the Evaluators performed the following activities, each of which covered a wide range of the types of Security Function claimed in the Security Target [b]:

- a) The Evaluators witnessed the Developer repeating a subset of the manual tests, covering each hardware platform.
- b) The Evaluators repeated a number of other manual Developer tests on the hardware platforms marked with Note (1) in table 2 above.
- c) The Evaluators repeated the running of the Developer's automated test suite on the hardware platforms marked with Note (2) in table 2 above. In the case of the SunFire 3800 machine this was done for three configurations: firstly with both the specified cpu/memory boards present, and then with each of these boards present individually.

30. The Evaluators also examined and confirmed their agreement with the Developer's multi-platform analyses.

III. Trusted Solaris 8 HW 7/03

31. Trusted Solaris 8 HW 7/03 exhibits the following types of change from Trusted Solaris 8 HW 12/02:

- a) Bug fixes (including some changes to TSP-enforcing code); and
- b) Additional device drivers for further hardware platforms.

Security Target

32. There have been no changes to the assurance or functionality requirements under assurance maintenance, but new hardware platforms have been added as noted below under 'Testing and Hardware Platforms' (a separate, formal evaluation process was followed to address the ALC_FLR.3 augmentation introduced for Issue 3.1 of the Security Target [b]).

Product Identifiers

33. The Trusted Solaris 8 HW 7/03 operating system is provided on the following CD sets:

- For SPARC platforms:
CD Part No.s 705-0871-10 and 705-0872-10, December 2003 revision A.
- For Intel and AMD platforms:
CD Part No.s 705-0875-10 and 705-0876-10, December 2003 revision A.

34. The Trusted Solaris 8 HW 7/03 AnswerBook CD is:

CD Part No. 705-0869-10, December 2003 revision A.

Delivery Procedures

35. There have been no changes under assurance maintenance. All software and documentation for assurance maintained derivatives are available on CD.

Installation and Guidance Documentation

36. The following documents have been updated. Both are included on the AnswerBook CD specified above under 'Product Identifiers'.

- Trusted Solaris 8 HW 7/03 Release Notes,
Part No. 817-3929-10, December 2003.
(updated for Trusted Solaris 8 HW 7/03)
- Trusted Solaris 8 HW 7/03 Transition Guide,
Part No. 817-3930-10, December 2003.
(outlining differences which Trusted Solaris 8 HW 7/03 exhibits compared with both
Trusted Solaris 8 4/01 and Trusted Solaris 8 HW12/02)

37. The Trusted Solaris 8 4/01 versions of other installation and guidance documents specified in the Trusted Solaris 8 4/01 Certification Report [a] remain current for Trusted Solaris 8 HW 7/03, with the exception of the following documents which had been updated for Trusted Solaris HW 12/02:

- a) The Trusted Solaris 8 HW 12/02 roadmap remains current for Trusted Solaris 8 HW 7/03 (when interpreted as referencing the above Trusted Solaris 8 HW 7/03 documentation where references to equivalent Trusted Solaris 8 HW 12/02 documentation are made).
- b) There have been some minor updates to the on-line man pages included on the operating system CDs. However the minor nature of these has not warranted republishing of the Trusted Solaris Reference Manuals, so the Trusted Solaris 8 HW 12/02 versions of these remain current for Trusted Solaris 8 HW 7/03.

Testing and Hardware Platforms

38. The Developer's testing was performed using both an automated test suite and additional manual tests. The following tests were performed by the Developer on all of the hardware platforms listed in table 4 below :

- The automated test suite run by the Developer for the Trusted Solaris 8 4/01 evaluation;
- The manual tests performed by the Developer for the Trusted Solaris 8 4/01 evaluation; and
- The additional functional tests and penetration tests originally performed by the Evaluators for the Trusted Solaris 8 4/01 evaluation.

39. To reproduce the pattern of usage which might typically be encountered on the more powerful platforms:

- a) The Developer also used a stress test suite, simulating a large number of login sessions, on the platforms marked with note (S) in the table below. The automated test suite was run both alone and concurrently with the stress test suite, on these platforms, to give confidence that the security functionality continued to operate as claimed under high load conditions.
- b) The Developer also used a race condition test suite, invoking multiple execution threads (e.g. for credential checking and file access), on the platforms marked with note (R) in the table below. Two copies of the race condition test suite were run concurrently with both the automated test suite and two copies of the stress test suite, to give confidence that no anomalies occurred in the behaviour of security functionality.

40. The single processor AMD Athlon machine was used as NFS server and NIS+ master wherever such functionality was required.

41. Whilst the OBPs, SC boards, OpenBoot PROM System Controller (OBPSC) boards and PC BIOS were in the environment of the TOE specified by the Security Target [b], some of the

penetration tests investigated the security of the bootstrapping capability of the OBP's, SC boards and OBPC boards on the SPARC platforms.

42. The environment of use specified by the Security Target [b] applied equally to the two laptop platforms.

43. Note that, whilst some of the platforms included in the table below are no longer marketed, they featured in the developer testing programme as some existing consumers with this hardware have upgraded or intend to upgrade their software to Trusted Solaris 8 HW 7/03.

Platform	Processor and Memory	Hard Drive	SPARC Boot option (para 41)	Notes (paras 39, 47)
SunBlade 100	500 MHz UltraSPARC IIe cpu, 512 Mb memory	15 Gb	OBP v4.0.45	
SunBlade 1000 Model 2750	2 x 750 MHz UltraSPARC III cpu, 2 Gb memory	36 Gb	OBP v4.2.2	
SunBlade 1500	1062 MHz UltraSPARC III cpu, 1024 Mb memory	75 Gb	OBP v4.9.4	(N)
SunBlade 2000	2 x 900 MHz UltraSPARC III cpu, 2048 Mb memory	73 Gb	OBP v4.5.16	
SunBlade 2500	2 x 1280 MHz UltraSPARC III i cpu, 4096 Mb memory	36 Gb	OBP v4.9.4	(N)
ServerBlade 1	650 MHz UltraSPARC IIi cpu, 512 Mb memory	30 Gb	OBP v4.7.5	(N)
Enterprise 420R	2 x 450 MHz UltraSPARC II cpu, 2 Gb memory	2 x 18 Gb	OBP v3.23.0	
SunFire V210	2 x 1002 MHz UltraSPARC III i cpu, 1024 Mb memory	2 x 36 Gb	OBP v4.8.2	(N)
SunFire V240	2 x 1280 MHz UltraSPARC III i cpu, 2048 Mb memory	2 x 36 Gb	OBP v4.8.2	(N)
SunFire V250	2 x 1280 MHz UltraSPARC III i cpu, 2048 Mb memory	4 x 36 Gb	OBP v4.11.4	(N)
SunFire V440 Configuration 1	1 board, comprising: 1281 MHz UltraSPARC IIIi cpu, 2 Gb memory	4 x 36 Gb	OBP v4.10.1	(N)
SunFire V440 Configuration 2	1 board, comprising: 1281 MHz UltraSPARC IIIi cpu, 2 Gb memory and 1 board, comprising: 1281 MHz UltraSPARC IIIi cpu, 4 Gb memory	4 x 36 Gb	OBP v4.10.1	(N)

Platform	Processor and Memory	Hard Drive	SPARC Boot option (para 41)	Notes (paras 39, 47)
SunFire V440 Configuration 3	4 boards, each comprising: 1281 MHz UltraSPARC IIIi cpu, 4 Gb memory	4 x 36 Gb	OBP v4.10.1	(N)
SunFire V480 Configuration 1	1 board, comprising: 2 x 900 MHz UltraSPARC III cpu, 2 Gb memory	2 x 36 Gb	OBP v4.6.4	
SunFire V480 Configuration 2	2 boards, each comprising: 2 x 900 MHz UltraSPARC III cpu, 2 Gb memory	2 x 36 Gb	OBP v4.6.4	
SunFire V880 Configuration 1	1 board, comprising: 2 x 900 MHz UltraSPARC III cpu, 2 Gb memory	6 x 73 Gb	OBP v4.6.3	
SunFire V880 Configuration 2	2 boards, each comprising: 2 x 900 MHz UltraSPARC III cpu, 1 Gb memory	6 x 73 Gb	OBP v4.6.3	
SunFire V880 Configuration 3	2 boards, each comprising: 2 x 900 MHz UltraSPARC III cpu, 2 Gb memory	6 x 73 Gb	OBP v4.6.3	
SunFire V1280	4 x 900 MHz UltraSPARC III cpu, 8192 Mb memory	2 x 36 Gb	SC v5.13.0009 (with RTOS v23)	(N)
SunFire 3800	1 board, comprising: 4 x 750 MHz UltraSPARC III cpu, 4 Gb memory	2 x 9 Gb	SC v5.13.2 (with RTOS v23)	(S), (R)
SunFire 3800	1 board, comprising: 4 x 900MHz UltraSPARC III cpu, 8 Gb memory	2 x 9 Gb	SC v5.13.2 (with RTOS v23)	
SunFire 12K Configuration 1	<i>Same specification as that below for SunFire 15K configuration 1</i>			(N)
SunFire 12K Configuration 2	<i>Same specification as that below for SunFire 15K configuration 2</i>			(N)
SunFire 12K Configuration 3	<i>Same specification as that below for SunFire 15K configuration 3</i>			(N), (S)
SunFire 15K Configuration 1	1 board comprising: 4 x 1050MHz UltraSPARC III cpu, 4 Gb memory	8 x 80 Gb	SC OBP v3.1.4.6 (with Sol 8 10/01)	(N)

Platform	Processor and Memory	Hard Drive	SPARC Boot option (para 41)	Notes (paras 39, 47)
SunFire 15K Configuration 2	1 board comprising: 2 x 1050MHz UltraSPARC III cpu, 4 Gb memory and 1 board comprising: 4 x 1050MHz UltraSPARC III cpu, 4 Gb memory and 2 boards, each comprising: 4 x 1050MHz UltraSPARC III cpu, 8 Gb memory and 1 board comprising: 4 x 1050MHz UltraSPARC III cpu, 16 Gb memory	8 x 80 Gb	SC OBP v3.1.4.6 (with Sol 8 10/01)	(N)
SunFire 15K Configuration 3	1 board comprising: 4 x 1050MHz UltraSPARC III cpu, 4 Gb memory and 1 board comprising: 4 x 1050MHz UltraSPARC III cpu, 8 Gb memory and 7 boards, each comprising: 4 x 1050MHz UltraSPARC III cpu, 16 Gb memory	8 x 80 Gb	SC OBP v3.1.4.6 (with Sol 8 10/01)	(N), (S)
SunFire 15K Configuration 4	10 boards, each comprising: 4 x 1050MHz UltraSPARC III cpu, 4 Gb memory and 1 board comprising: 4 x 1050MHz UltraSPARC III cpu, 8 Gb memory and 2 boards, each comprising: 4 x 1050MHz UltraSPARC III cpu, 16 Gb memory and 1 MaxCPU processor board comprising: 2 x 1050MHz UltraSPARC III cpu	8 x 80 Gb	SC OBP v3.1.4.6 (with Sol 8 10/01)	(N)
SunFire 15K Configuration 5	17 boards, each comprising: 4 x 1050MHz UltraSPARC III cpu, 16 Gb memory	8 x 80 Gb	SC OBP v3.1.4.6 (with Sol 8 10/01)	(N), (S)
Intel P3	450 MHz Intel Pentium 3 cpu, 128 Mb memory	9 Gb & 14 Gb	-	
Intel P3	2 x 450 MHz Intel Pentium 3 cpu, 128 Mb memory	9 Gb & 14 Gb	-	

Platform	Processor and Memory	Hard Drive	SPARC Boot option (para 41)	Notes (paras 39, 47)
Intel P4	2.4 GHz Intel Pentium P4 cpu, 512 Mb memory	60 Gb	-	
Sony Vaio laptop	2498 MHz Intel Pentium P4 cpu, 512 Mb memory	15 Gb	-	(N)
Panasonic laptop	1999 MHz Intel Pentium P4 cpu, 768 Mb memory	20 Gb	-	(N)
Intel Xeon	2 x 24 GHz Intel Xeon cpu, 1024 Mb memory	60 Gb	-	
Netframe 1610 (V600)	2 x 3331 MHz hyperthreaded Intel Xeon cpu, 1024 Mb memory	2 x 18 Gb	-	(N), (R)
Dell Poweredge 2650	2 x 3331 MHz Intel Xeon cpu, 1024 Mb memory	2 x 36 Gb	-	(N)
AMD Athlon	2.4 GHz AMD Athlon cpu, 512 Mb memory	60 Gb	-	
AMD Athlon	2 x 2200 MHz AMD Athlon cpu, 512 Mb memory	60 Gb	-	
AMD Opteron	2 x 1.4 GHz AMD Opteron cpu, 2048 Mb memory	2 x 38 Gb	-	(N)

Table 4: TSol8 HW 7/03 Test Platforms

44. The Developer additionally performed multi-platform analyses to demonstrate that the relevant machines above were representative of the families given in table 5 below, with respect to the claims of the Security Target [b] for the operation of Trusted Solaris 8 HW 7/03 on such hardware platforms. Note that:

- a) In the case of the SunFire 280R family the multi-platform rationale demonstrated equivalence with the SunBlade 1000 hardware platform. The latter thus represented the 'relevant' machine in this case.
- b) A minimum memory of 256 Mb (to support administrator SMC requests on NFS server, NIS+ master workstations) or 128 Mb (on client workstations) and a minimum hard disk size of 2 Gb are recommended. There is a risk (which is more significant nearer these limits) that lower processor speeds, memory sizes or hard disk sizes than those tested may introduce performance degradation problems.²

² For the more powerful machines however, it is expected that significantly greater memory sizes and hard disk sizes will be used.

Family	Processor Options	Memory Options	Hard Drive Options
SunFire 280R	2 x 750 MHz, 900 MHz, 1015 MHz or 1200 MHz UltraSPARC III cpu	From recommended minimum to 8 Gb	From recommended minimum to 146Gb
SunFire V440	From 1 to 4 boards, each comprising: 1062MHz or 1280MHz UltraSPARC IIIi cpu	From recommended minimum to 32 Gb	From recommended minimum to 146Gb
SunFire V480	1 or 2 boards, each comprising 1 or 2 x 900, 1050 or 1200MHz UltraSPARC III cpu	From recommended minimum to 32 Gb	From recommended minimum to 146Gb
SunFire V880	1 or 2 boards, each comprising from 1 to 4 x 750, 900, 1050 or 1200 MHz UltraSPARC III cpu	From recommended minimum to 64 Gb	From recommended minimum to 876Gb
SunFire 3800	1 or 2 boards, each comprising from 1 to 4 x 750, 900, 1050 or 1200 MHz UltraSPARC III cpu	From recommended minimum to 64 Gb	From recommended minimum to 35 Tb
SunFire 12K	From 1 to 9 system boards and, optionally, from 1 to 8 MaxCPU boards, each comprising: from 1 to 4 (system board) or 1 or 2 (MaxCPU board) 750, 900, 1050 or 1200 MHz UltraSPARC III cpu	From recommended minimum to 288 Gb	From recommended minimum to maximum permitted by disk array
SunFire 15K	From 4 to 18 system boards and, optionally, from 1 to 17 MaxCPU boards, each comprising: from 1 to 4 (system board) or 1 or 2 (MaxCPU board) 750, 900, 1050 or 1200 MHz UltraSPARC III cpu	From recommended minimum to 576 Gb	From recommended minimum to maximum permitted by disk array

Table 5: TSol8 HW 7/03 Platform Ranges Covered by Analysis

45. In addition to the above testing performed in respect of Trusted Solaris 8 HW 7/03, the Developer had previously performed tests formulated to specifically check patches issued ahead of, and subsequently rolled into, this version. These tests were run on some of the types of machines specified in tables 4 and 5 above.

46. During Assurance Maintenance Audit No. 2 the Evaluators confirmed that there was suitable evidence of security testing for Trusted Solaris 8 HW 7/03 on the above hardware platforms.

47. To confirm the adequacy of Developer Testing the Evaluators performed the following activities, each of which covered a wide range of the types of Security Function claimed in the Security Target [b]:

- a) The Evaluators examined the logs of the Developer's running of the automatic test suite for all platforms, including the testing run in conjunction with the stress and race condition test suites.
- b) The Evaluators witnessed the Developer repeating a subset of the other tests, covering each hardware platform not previously used for testing of Trusted Solaris 8 HW 12/02; i.e. those marked with note (N) in table 4 above. In the case of the original Trusted Solaris 8 4/01 evaluator additional functional tests, the evaluators also repeated a sample of these tests themselves.

48. The Evaluators also examined and confirmed their agreement with the Developer's multi-platform analyses.

49. Finally, in respect of tests formulated to check patches subsequently rolled into Trusted Solaris 8 HW 7/03, the Evaluators witnessed a sample of these tests being re-run, and re-ran a further sample themselves.