



## Implementation Class Information

**Implementation Class Category:** Maintenance

**Processor Identification:** Rational Embedded Apex Ada 95/83, Sun Sparc Solaris to PowerPC family for LynxOS, version 4.2.0b

**Host Systems:** Sun SPARC running Solaris 2.6, 2.7, 8 or 9

**Target Systems:** PowerPC under LynxOS 3.1.0a

**Representative Processor and Configuration Tested:**

**Host System:** *Sun Ultra 2, running Solaris 2.7*

**Target System:** Motorola Powerstack (PowerPC 603) under LynxOS 3.1.0a

**ACATS Version Used for Testing Representative Processor:**

ACATS 2.4 ACATS Modification List 2.4B

**Client Certification of Testing and Processor Derivation:**

I, the undersigned, representing the Client, certify that the above identified representative processor was tested on the described configuration with the customized ACATS version described above, including the code modifications and implementation-defined substitution values that were used in the conformity assessment leading to the certificate named in this Supplement, with modifications described in this Supplement, and that the testing results were the same as those obtained in that conformity assessment, with exceptions as described in this Supplement. I further declare that the Client knows of no deliberate deviations from the Ada language standard (ANSI/ISO/IEC 8652:1995) as corrected by Technical Corrigendum 1 (ISO/IEC 8652:1995/COR.1:2000) in the identified representative processor above. I further certify that the above-identified representative processor and configuration meets the definition of base, maintained, or rehosted implementation (as described in the Operating Procedures for Ada Conformity Assessment).

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Date

## Maintenance Changes:

### Improved application performance (Perfective)

Apex 4.2 had improvements in middle pass optimizations as well as upgraded code generation.

### New parameter passing conventions (Perfective)

Two implementation-defined conventions:

- `pragma Convention ( Ada_Pass_By_Copy, [some-type] );`
- `pragma Convention ( Ada_Pass_By_Reference, [some-type] );`

have been added as permitted by RM95 B.1(11). These conventions may be used in pragmas Import, Export and Convention.

### Fixed Point Rounding (Perfective)

The fixed point multiplication, division and conversion operations used to ROUND the result to the nearest machine representable number when the operation was executed at runtime, but it used truncation when the result was computed at compile-time. The Apex 4.2.0 compiler now uses truncation uniformly.

### Atomic

Compiler updated to support individual read/write for records.

## ACATS Modifications:

None

## Test Results Differences:

### CXC6001

Under referenced version, the test now executes and reports "PASSED" while under original certified processor the test did not compile indicating that it did not support individual read/write for records. The reference processor has been updated to support individual read/write for records.

The following list of tests differ from the original certified processor in that the wording on some of the error messages is different;

b33204a, b33205a, b35302a, b36171a, b380001, b38008a, b38009a, b3a0002, b3a2002, b3a2009, b3a2014, b44002b, b48002a0, b48002b, b48002e, b52002c, b610001, b7310011, b7310014, b84007a, b85001f, b85008g, b91001g, b91004a, b95031a, b95080c, b99002a, b99002b, ba2013b, bd2a03a, bd2a03b, bd2a67a, bd2b03a, bd2b03b, bd2c03a, bd2d03a, bd2d03b, bd3001c, bd3003a, bd4003a, bd4003b, bd5104a, bd7203a, be3606c, bxc6001 , bxc60010 , bxc60033