



## Hardlock Year 2000 Compliance Tests

This document summarises the year 2000 compliance tests for Hardlock performed by Aladdin Knowledge Systems.

Programs, applications and hardware not mentioned below are not performing any date storage and/or calculations and are therefore compliant with year 2000.

### ***Year 2000 compliance rules:***

The four rules listed below apply to year 2000 conformity. Compliance to these four rules has been tested. Each test specifies the rule(s) tested.

Rule 1: No value for a current date will cause an interruption in operation.

Rule 2: Date-based functionality must behave consistently for dates prior to, during and after year 2000.

Rule 3: In all interfaces and data storage, the century in any date must be specified either explicitly or by unambiguous algorithms for inferring rules.

Rule 4: Year 2000 must be recognised as a leap year.

### ***Hardlock RUS Expiration Date Support:***

The Hardlock RUS provides extended functionality for the use of expiration dates. Different programs are involved, that are required for creating RUS Hardlocks, view the orders in a database and implement the software protection for the project.

**API/Latteccino:** Return values for the API commands

**Cappuccino:** Template manager, workbench and view of the database.

**Gazzetta:** View of the database and filter function for date related criteria's

**Espresso:** Protect applications with Hardlock RUS

**Hardlock Server :** additional functionality for RUS

Tested Hardware components:

- Hardlock with Memory: Expiration date written to memory
- Hardlock Server with Memory: Expiration date written to license file

Tested Software components for Bistro 2.0 in 10/99

- Bistro 2.0 applications from Release 10/99: Cappuccino, Latteccino, Espresso, Gazzetta; HL-Server (Beta Version)
- HL-Crypt for Win32-> used by Espresso

The following tests for Year 2000 have been performed and passed the test:

#	Test Case	PC Date & PC Time	Test for Rule:	Results for Hardlock RUS using a global expiry date and slot expiration date (sever only)
1	Advance to Year 2000 ( Change in year )	31.12.1999 23:59:55	1/2/3	All expiration dates will be recognised and date will be displayed as expected.
2	Advance to 10.01.2000 ( First 7 digit date )	09.01.2000 23:59:55	1/2/3	All expiration dates will be recognised and date will be displayed as expected.
3	Advance to 29.02.2000 ( Leap Year )	28.02.2000 23:59:55	1/2/3/4	All expiration dates will be recognised and date will be displayed as expected.
4	Advance to 01.03.2000 ( Leap Year )	29.02.2000 23:59:55	1/2/3/4	All expiration dates will be recognised and date will be displayed as expected.
5	Not to be processed	30/02/2000	1/2/3	Can not be used as expiry date
6	Not to be processed	31/02/2000	1/2/3	Can not be used as expiry date
7	Advance to 01.10.2000 ( First 2 digit month )	30.09.2000 23:59:55	1/2/3	All expiration dates will be recognised and date will be displayed as expected.
8	Advance to 10.10.2000 ( First 8 digit date )	28.02.2000 23:59:55	1/2/3	All expiration dates will be recognised and date will be displayed as expected.
9	Advance to 01.01.2000 ( Change in year )	31.12.2000 23:59:55	1/2/3	All expiration dates will be recognised and date will be displayed as expected.
10	Advance to 01.03.2004 ( Leap Year )	29.02.2004 23:59:55	1/2/3	All expiration dates will be recognised and date will be displayed as expected.

Notes:

1. Identical tests have been performed for the different operating systems Windows 95 OSR 2.5, Windows 98 First Edition + Y2K Fixes, Windows NT 4.0 Service Pack 6, Windows 2000 Professional RC 2.
2. There has been a problem with the HL-Server in the transition from the 29.02.2000 to the 01.03.2000. The bug has been fixed during the test. Since the HL-Server version on the CD 10/99 has been only a beta version, this problem does not affect the general year 2000 compliance of the current Hardlock RUS.
3. The server will recognise the date change at 00:59.59 and not as you may expect at 23:59:59.

### ***HL-Crypt expiration date support***

The purpose of this test was to check the HL -Crypt expiration date function. The expiration date was set to January 2<sup>nd</sup>, 2002. The –expwarn was set to 800 (warn 800 days before expiration).

Tested hardware components:

- Hardlock with memory. Expiration date written into memory. (only this key -type contains any date relevant information.)

Tested software components:

- HL-Crypt for DOS, HL-Crypt for Windows and HL -Crypt for Win32.

#	Test Case	PC Date & Time	Test for rule:	Remaining days displayed:	Remaining days displayed if program started after 30 seconds again:
1	Advance to year 2000	31.12.1999 23:59:40	1	733	732
2	Advance to year 2002	31.12.2001 23:59:40	1	2	1
3	Leap year	28.02.2000 23:59:40	1/4	673	672
4	Leap year	29.02.2001 23:59:40	1/4	308	307

Note:

Identical tests with the same results were performed for the DOS, Win16 and Win32 version of HL-Crypt (all part of 07/98 Hardlock Software Release) to test their interpretation of the calendar.

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