

# Detecting Implementation of CDR's in Common Lisp Runtimes

Marco Antoniotti  
Università degli Studi di Milano Bicocca, Milan, Italy  
<marco.antoniotti@unimib.it>

June 14, 2013

**Keywords:** Common Lisp, CDR, Implementation Features.

## 1 Introduction

The *Common Lisp Document Repository* (CDR) [2] was created as a very light-weight infrastructure for the Common Lisp community, where a number of “documents” and “specifications” are collected and *fixed* for the benefit of programmers and implementors. Each document is given a unique *CDR identifier* (essentially a number), which is retained over the years; each of these documents can then be referred simply as *CDR number N* (or, more simply, a *CDR*, when not referring to a particular document in the repository).

At the time of this writing, there is yet no agreed upon way to check whether a Common Lisp implementation provides a particular CDR or not (i.e., whether a particular CDR is present “out of the box”, or whether a library implementing a specific CDR is loaded in the Common Lisp environment). The goal of this document is to provide a specification for this behavior.

### 1.1 Rationale

Each CDR is assigned a unique number/identifier. It therefore appears natural to resort to the Common Lisp `*features*` machinery to provide a minimal infrastructure to check for the presence of a given CDR in a Common Lisp environment. To do so, a few definitions are necessary and will be listed in the next section.

## 2 Specification

The specification contained in this document consists of the following items:

1. As per CDR n. 0 and CDR n. 4, each document submitted to the CDR editors is assigned a unique number; from now on it will also be assigned a *keyword* of the form `:cdr-n` (where *n* is the unique CDR number assigned by the editors). The number *n* is a (`integer 0`), if Common Lisp types are to be used, and its typographical representation is as if it were *printed* with `*PRINT-BASE*` set to 10.

2. An *implementation* of a given CDR (say, CDR 42) should provide the appropriate keyword (say, `:cdr-42`) in the `*features*` list.
3. If a given `:cdr-n` is present in the `*features*` list of a given Common Lisp environment, that means only that
  - that specific instance of a Common Lisp environment *purports to implement* CDR *i* at a “satisfactory” level of compliance.

Users and programmers can thus check whether a give CDR is “present” in a Common Lisp environment, using the usual `*features*` checking machinery.

## 2.1 Guarantees, Non-guarantees etc. etc.

It must be noted that there are possible pitfalls that the “CDR process and infrastructure” cannot avoid. In the following they are listed in no particular order.

### 2.1.1 “Purports to implement”

The “CDR process and infrastructure” cannot guarantee that the presence of a *CDR keyword* in a Common Lisp environment `*features*` list corresponds to a “correct” and “complete” implementation of a given CDR. “Correctness”, “completeness” and “testing” are left to the “provider” of a given CDR.

It is understood that a provider of a given CDR (a provider who *purports to implement...*) will make a best effort to fully implement a specification.

### 2.1.2 Multiple Implementations of a Given CDR

It may be possible for *multiple* implementations of a given CDR to co-exist in a given Common Lisp environment. All of them will rely on a single `:cdr-n` in the `*feature*` list. Which particular implementation is then actually used and where, is left to the programmer and her/his use of the package system.

### 2.1.3 Example

As an example, testing for the presence of CDR 10 will be done as follows:

```
#+cdr-10 (abi-version)
```

### 2.1.4 CDR’s Current State

The current set of CDR’s is listed at the site <http://cdr.eurolisp.org>. The following keywords are thus assigned to each of the finalized CDR’s:

```
:cdr-0, :cdr-1, :cdr-2, :cdr-3, :cdr-4, :cdr-5, :cdr-6, :cdr-7, :cdr-8, :cdr-9, :cdr-10, :cdr-11, :cdr-12, :cdr-13.
```

### 3 Acknowledgements

The CDR editors, and the participants to the CDR “side”-meeting at the European Lisp Symposium in Madrid, June 4, 2013 (ELS 2013).

### References

- [1] *The Common Lisp Hyperspec*, published online at <http://www.lisp.org/HyperSpec/FrontMatter/index.html>, 1994.
- [2] *The CDR site*, at <http://cdr.eurolisp.org>.

### A Copying and License

This work may be distributed and/or modified under the conditions of the *Creative Commons Attribution 3.0 Unported License*, or (at your option) any later version. The latest version of this license can be found at <http://creativecommons.org/licenses/by/3.0/>.

The current maintainer of this work is Marco Antoniotti <[marco.antoniotti@unimib.it](mailto:marco.antoniotti@unimib.it)>.