

## inline namespace

## Chapter 3 Unsafe Features

```

public:
    Parser();
    int parse(T* result, const char* input);
        // Load result from null-terminated input; return 0 (on
        // success) or nonzero (with no effect on result).
};

template <typename T>
double analyze(const Parser<T>& parser);
}
}

```

As suggested by the name `v1`, this namespace serves primarily as a **mechanism** to support library evolution through API and ABI versioning (see *Link-safe ABI versioning* on page 1067 and *Build modes and ABI link safety* on page 1071). The need to specialize `class Parser` and, independently, the reliance on **ADL** to find the **free function** template `analyze` require the use of **inline namespaces**, as opposed to a conventional namespace followed by a **using directive**.

Note that, whenever a subsystem starts out directly in a first-level namespace and is subsequently moved to a second-level nested namespace for the purpose of versioning, **declaring** the inner namespace **inline** is the most **reliable** way to avoid inadvertently destabilizing existing clients; see also *Enabling selective using directives for short-named entities* on page 1074.

Now suppose we decide to enhance `parselib` in a non-backwards-compatible manner, such that the **signature** of `parse` takes a second argument `size` of type `std::size_t` to allow parsing of non-**null-terminated strings** and to reduce the risk of buffer overruns. Instead of unilaterally removing all support for the previous version in the new release, we can create a second namespace, `v2`, containing the new implementation and then, at some point, make `v2` the **inline namespace** instead of `v1`:

```

#include <cstddef> // std::size_t

namespace parselib
{
    namespace v1 // Notice that v1 is now just a nested namespace.
    {
        template <typename T>
        class Parser
        {
            // ...

        public:
            Parser();
            int parse(T* result, const char* input);
        };
    };
};

```