

NAME

browse – Invoke a browser to display a reference (URI/URL or file)

SYNOPSIS

```
browse [ --file | --uri ] [ --base b ] [ --magic ] [ --relative ] [ --relfile ] [ --nochange ] [ --dir ] [ --browser ] -- reference
```

DESCRIPTION

browse invokes a browser to display a reference using the Secure BROWSER convention. A “reference” is either a file or a URI/URL. **browse** first converts the given reference into an “absolute reference” if it’s not already one. An “absolute reference” is either an absolute local pathname (a filename beginning with `/`) or an absolute URI/URL (which begins with lower case letters followed by a `:`).

After it’s converted into an absolute reference, browse then examines the the BROWSER environment variable, which should contain a colon-separated series of browser command parts. These command parts are tried in order, executing each using `/bin/sh`, until one succeeds (returns 0); empty command parts (e.g., `::`) are ignored. In a command part, `%%` becomes a single `%`, `%c` becomes a single `:`, and `%s` becomes the “escaped absolute reference” to be viewed; a command part not having a `%s` has `%s` appended to it. An “escaped absolute reference” is an absolute reference with backslashes inserted before each character special to the shell (to prevent certain security attacks).

If defined, the value of the environment variable BROWSER_OVER_RIDE overrides the value BROWSER, but the value of BROWSER_OVER_RIDE is not passed on to any browsers called by browse. This supports “temporary overriding” of browsers.

If not told otherwise, browse will determine that a reference beginning with `/` is a filename and anything else is a URI/URL. Use `--file` or `--uri` to declare otherwise. browse returns 0 (true) if a browser was successfully invoked, and non-zero (false) if one wasn’t. This definition of “success” is determined by the browsers selected; if a browser considers displaying an error message “success,” then browse will too.

OPTIONS

- file** The reference is a filename
- uri** The reference is a URI/URL
- url** Synonym for `--uri`
- base *b***
Set base (“starting point”) to *b*
- magic**
If no base, `'www.'` becomes `'http://www.'` and `'ftp.'` becomes `'ftp://ftp.'`
- relative**
If no base, don’t prefix relative URL references
- relfile**
If no base, relative URLs are prefixed with `'file://'`
(otherwise they’re prefixed as `"http://"`)
- nochange**
Don’t change the reference in any way other than shell escapes.
- dir** The base is a directory, not a base document.
- browser**
Don’t set BROWSER if it’s not already set.
- End option processing.

EXAMPLES

Here are some example uses. From a shell:

```
/usr/bin/browse -- "/etc/passwd"
/usr/bin/browse -- "http://www.dwheeler.com"
```

```

/usr/bin/browse --uri -- "$url"
/usr/bin/browse --base \
    "http://www.dwheeler.com/index.html" \
    -- "dwheeler.html"

```

In the last example, the “base” document is used as the starting point (as though the user had clicked on a link in that document). In this case, the resulting document is “http://www.dwheeler.com/dwheeler.html”.

From C (note - don’t use system(3)):

```

execl("/usr/bin/browse", "browse", "--", url, (char *) 0);

```

From perl (note - don’t use backquotes or single-parameter system()):

```

system("/usr/bin/browse", "browse", "--", url);

```

SECURITY

It is *highly* recommended that you use the -- option if you’re viewing references provided by someone else. Otherwise, attackers may create references that begin with “--” to confuse this (and other) programs. Unless directed otherwise, browse will convert any reference to an absolute reference (which does not begin with “-”), so no browser will end up with “-” as the first character.

WARNING! From a non-shell, *do not* invoke this program through a shell - use whatever call does *not* invoke the shell. in C, avoid system(3); in Perl, avoid back-ticks and the single-argument version of system(). Otherwise, an attacker could insert shell special characters into a link and force the user to a program and arguments of that attacker’s choosing.

By itself, this mechanism doesn’t protect against hypertext links such as “file:///dev/zero”, which provide an infinite number of 0’s (and may crash your browser). If protection from this sort of thing is important to you, either modify your browser to protect itself, or modify your BROWSER value so that it first checks for “dangerous” references.

AUTHOR

browse was written by David A. Wheeler <dwheeler@dwheeler.com>, who also developed the Secure BROWSER specification.

BUGS

None are known. The heuristic converting non-absolute references to absolute references is somewhat complex, but that seems unavoidable for “doing the right thing.”

AVAILABILITY

You can get this program and related information from <http://www.dwheeler.com/browse>.

SEE ALSO

uri(7)