

luabreakurl: Breakable URLs with visible continuation marks

Klaus Rindfrey

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Abstract

The `luabreakurl` package typesets long, clickable URLs and URIs with flexible line breaking under Lua^AT_EX. It keeps the URI scheme intact and can display a configurable continuation mark whenever a URL is continued on the following line.

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1 Introduction

Long URLs can cause overfull lines, especially in narrow columns, footnotes, bibliographies, and technical documentation. The standard `\url` command and packages such as `xurl` provide useful line-breaking facilities.

The particular aim of `luabreakurl` is to combine very frequent break opportunities with a visible indication that the URL continues on the next line.

The package follows a deliberately simple approach:

- it inserts a possible break after almost every character;
- it keeps the URI scheme and a following `//` together;
- it preserves the URL as a clickable hyperlink;
- it prints a continuation mark only when a break is actually taken;
- it does not change the hyphenation of ordinary text.

2 Requirements

The package is intended for Lua $\text{\LaTeX}$. It loads `hyperref`, which is used to create the clickable hyperlink.

3 Installation

For a local installation, run

```
lualatex luabreakurl.ins
```

This extracts `luabreakurl.sty` from the documented source. Place the generated file in the same directory as your document or in a directory searched by $\text{\TeX}$.

Once the package is distributed through $\text{\TeX}$ Live or MiK $\text{\TeX}$, it can be installed with the package manager of the respective distribution.

4 Quick start

Load the package in the document preamble:

```
\usepackage{luabreakurl}
```

Then use `\breakurl` for a URL or URI:

```
\breakurl{https://www.example.org/a/very/long/url}
```

The result is typeset in a typewriter font and remains clickable.

5 User interface

5.1 `\breakurl`

`\breakurl` The command

```
\breakurl{<URL or URI>}
```

typesets its argument as a clickable hyperlink and inserts line-break opportunities after almost every character.

The argument is read verbatim, so characters such as `_` may be used without escaping.

The URI scheme is protected. For example, `https://`, `mailto:`, and `git+ssh://` are kept together at the beginning of the URI.

5.2 `\luabreakurlsetup`

`\luabreakurlsetup` Package settings are changed with

```
\luabreakurlsetup{
  continuation={\tiny$\rightarrow$}
}
```

The only setting currently available is `continuation`. Its default value is `\tiny$\hookrightarrow$`. The value is printed only when a line break is actually taken.

To disable the continuation mark, use an empty value:

```
\luabreakurlsetup{
  continuation={}
}
```

Settings obey normal $\TeX$ grouping. A temporary setting can therefore be limited to a group:

```
\begingroup
```

```

\luabreakurlsetup{
  continuation={\tiny$\rightarrow$}
}
\breakurl{https://www.example.org/a/very/long/url}
\endgroup

```

6 Examples

The following narrow block deliberately forces line breaks:

```

https://www.example.org/documenta-
tion/releases/2026/07/20/a/very-
/long/path/with/query/parameters-
?language=en&format=pdf&download-
=true

```

A different continuation mark can be selected:

```

git+ssh://git.example.org/reposi-
tories/latex/luabreakurl/branche-
s/feature/documentation/index.ht-
ml

```

Other URI schemes work in the same way:

```

mailto:someone.with.a.very.long.-
name+latex-package@example.org?s-
ubject=Question-about-luabreaku-
rl

doi:10.1000/abcdefghijklmnopqrst-
uvwxyz0123456789ABCDEFGHIJKLMN-
OPQRSTUVWXYZ

```

7 URI scheme recognition

A URI scheme is recognized according to the RFC 3986 form

```
ALPHA *( ALPHA / DIGIT / "+" / "-" / "." ) ":"
```

If the colon is followed immediately by `//`, the two slashes are protected as part of the prefix. Consequently prefixes such as `https://`, `ftp://`, `file://`, `git+ssh://`, `mailto:`, and `doi:` remain intact.

8 Comparison with other packages

The standard `\url` command and the `xurl` package are suitable for many documents and provide established URL-breaking behaviour.

`luabreakurl` is intended for the more specific case in which breaks should be permitted after almost every character and a visible continuation mark is desired.

It is therefore not intended as a general replacement for `xurl`.

9 Limitations

- The package is intended for Lua^AT_EX.
- `\breakurl` is intended for URLs and URIs, not for arbitrary text.
- The command takes a verbatim argument and therefore cannot be used in every moving argument.
- Break opportunities are intentionally very frequent. Applications requiring conventional URL-breaking rules may prefer `xurl`.

10 Building the package and documentation

A complete build of the package documentation is simply:

```
make
```

To build the documentation and the demonstration document, run:

```
make check
```

Internally, the documentation build performs the following steps:

```
lualatex luabreakurl.dtx
makeindex -s gind.ist -o luabreakurl.ind luabreakurl.idx
makeindex -s gglo.ist -o luabreakurl.gls luabreakurl.glo
lualatex luabreakurl.dtx
lualatex luabreakurl.dtx
```

The resulting `luabreakurl.pdf` serves both as the user manual and as the documented implementation.

11 License

The package is distributed under the MIT License.

12 Change history

13 Implementation

13.1 Package declaration

```
1 \<package>
2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesExplPackage
4   {luabreakurl}
5   {2026-07-19}
6   {1.00}
```

```

7 {Breakable URLs with visible continuation marks}
8
9 \RequirePackage{hyperref}
10
11 \ExplSyntaxOn

```

13.2 Variables

```

12 \tl_new:N \l_luabreakurl_url_tl
13 \tl_new:N \l_luabreakurl_continuation_tl
14 \seq_new:N \l_luabreakurl_scheme_match_seq
15
16 \int_new:N \l_luabreakurl_url_len_int
17 \int_new:N \l_luabreakurl_scheme_len_int
18 \int_new:N \l_luabreakurl_position_int

```

13.3 Configuration

```

19 \keys_define:nn
20 { luabreakurl }
21 {
22   continuation .tl_set:N =
23     \l_luabreakurl_continuation_tl,
24
25   continuation .initial:n =
26     {
27       \tiny
28       $\hookrightarrow$
29     }
30 }

```

13.4 URI scheme detection

Determine the length of the initial URI scheme, including a following `//`.

```

31 \cs_new_protected:Npn \luabreakurl_set_scheme_length:n #1
32 {
33   \int_zero:N \l_luabreakurl_scheme_len_int
34   \seq_clear:N \l_luabreakurl_scheme_match_seq
35
36   \regex_extract_once:nnNT
37   { \A [A-Za-z] [-A-Za-z0-9+.* : (//)? }
38   { #1 }
39   \l_luabreakurl_scheme_match_seq
40   {
41     \int_set:Nn
42     \l_luabreakurl_scheme_len_int
43     {
44       \tl_count:e
45       {
46         \seq_item:Nn
47         \l_luabreakurl_scheme_match_seq
48         { 1 }
49       }
50     }
51   }
52 }

```

13.5 Insertion of a break point

```
53 \cs_new_protected:Npn \luabreakurl_insert_breakpoint:
54 {
55     \nobreak
56     \hskip 0pt plus .5pt
57
58     \discretionary
59     {
60         \hbox to 0pt
61         {
62             \tl_use:N \l_luabreakurl_continuation_tl
63             \hss
64         }
65     }
66     { }
67     { }
68 }
```

13.6 Typesetting

```
69 \cs_new_protected:Npn \luabreakurl_typeset:n #1
70 {
71     \group_begin:
72     \ttfamily
73
74     \tl_set:Nn \l_luabreakurl_url_tl { #1 }
75
76     \int_set:Nn
77     \l_luabreakurl_url_len_int
78     { \tl_count:N \l_luabreakurl_url_tl }
79
80     \luabreakurl_set_scheme_length:n { #1 }
81
82     \href{#1}
83     {
84         \int_zero:N \l_luabreakurl_position_int
85
86         \tl_map_inline:Nn
87         \l_luabreakurl_url_tl
88         {
89             \int_incr:N \l_luabreakurl_position_int
90
91             ##1
92
93             \int_compare:nNnT
94             { \l_luabreakurl_position_int }
95             >
96             { 1 }
97             {
98                 \int_compare:nT
99                 {
100                     \l_luabreakurl_position_int
101                     >=
102                     \l_luabreakurl_scheme_len_int
```

```

103         }
104     {
105         \int_compare:nNnT
106             { \l_luabreakurl_position_int }
107             <
108             { \l_luabreakurl_url_len_int - 1 }
109             {
110                 \luabreakurl_insert_breakpoint:
111             }
112     }
113 }
114 }
115 }
116
117 \group_end:
118 }

```

13.7 Public commands

```

119 \NewDocumentCommand
120   \luabreakurlsetup
121   { m }
122   {
123       \keys_set:nn
124         { luabreakurl }
125         { #1 }
126   }
127 \NewDocumentCommand
128   \breakurl
129   { v }
130   {
131       \luabreakurl_typeset:n { #1 }
132   }
133 \ExplSyntaxOff
134 \end{package}

```

Change History

v0.01			
	General: Initial implementation. . .	5	detection and configurable continuation mark. 5
v0.02			v1.0
	General: Internal improvements. . .	5	General: Renamed the package to luabreakurl and prepared the first public release. 5
v0.03	General: General URI scheme		

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