

The `timestamp` package ^{*}

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Abstract

L^AT_EX package that defines a (hexa-)decimal timestamp.

Résumé

Extension L^AT_EX offrant un horodateur (hexa-)decimal.

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^{*}This file describes version v1.5, last revised 2020/04/28.

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Part I

Usage

<code>\usepackage</code>	<code>\usepackage{timestamp}</code>
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Requirement

1. `timestamp.sty` and its dependencies are in the path of the L^AT_EX engine. See [Part III, section 3](#).
2. Goes in the *preamble*

<code>erw_timestamp:nn</code>	<code>\erw_timestamp:nn{date time datetime}{10 16}</code>
-------------------------------	---

Semantics Timestamp in base 10 or 16

Part II

Listing

Listing 1. \erw_timestamp:nn

```
\ExplSyntaxOn
\noindent\erw_timestamp:nn{date}{10}{-}
\noindent\erw_timestamp:nn{time}{10}\\
\noindent\erw_timestamp:nn{datetime}{10}\\
\erw_timestamp:nn{date}{16}{\%}
\erw_timestamp:nn{time}{16}\\
\syshex_option:n{ timestamp / delim = {\%} }
\erw_timestamp:nn{datetime}{16}\\
\ExplSyntaxOff
```

20200428-1935
20200428-1935
1343bec%78f
1343bec%78f

Listing 2. \erw_timestamp in conjunction with iow

```
\ExplSyntaxOn
\syshex_option:n{ timestamp / delim = \c_empty_tl }
\iow_new:N \foo_iow
\tl_set:Nx \foo_dec { \erw_timestamp:nn{datetime}{10} }
\tl_set:Nx \foo_hex { \erw_timestamp: }
\iow_open:Nn \foo_iow{\foo_hex}
\iow_now:Nn\foo_iow{Hello,\ world!}
\iow_close:N \foo_iow
D:\foo_dec\\
\file_timestamp:n{\foo_hex}\\
\file_input:n{\foo_hex}
\ExplSyntaxOff
```

D:202004281935
D:20200428193555-04'00'
Hello, world!

Part III

Other

1 Acknowledgment

This work has benefited from Q&A's from the L^AT_EXcommunity[2]

2 Install

- 1) Compile `syshex.dtx` (under Unix, `$tex syshex.dtx`)
- 2) Put the generated `syshex.sty` in the search path of the L^AT_EXengine

3 Support

This package is available from <https://www.ctan.org/pkg/syshex> and <https://github.com/rogard/syshex>.

3.1 Platform

- i)* Linux laptop 4.15.0-20-generic #21-Ubuntu SMP Tue Apr 24
↪ 06:16:15 UTC 2018 x86_64 x86_64 x86_64 GNU/Linux

3.2 Engine

- a)* pdfTeX 3.14159265-2.6-1.40.20 (TeX Live 2019)
- b)* pdfTeX 3.14159265-2.6-1.40.21 (TeX Live 2020)
- c)* LuaHBTeX, Version 1.12.0 (TeX Live 2020)
- d)* XeTeX 3.14159265-2.6-0.999992 (TeX Live 2020)

3.3 Results

- 1) `syshex v1.2` compiles satisfactorily on platform *i)* and engines *b)*, *c)*, and *d)*

References

- [1] The L^AT_EX3 Project Team *The L^AT_EX3 interfaces*, 2019, <http://ftp.math.purdue.edu/mirrors/ctan.org/macros/latex/contrib/l3kernel/interface3.pdf>
- [2] <https://tex.stackexchange.com/users/112708/erwann?tab=questions>

Change History

v1.0	Remove: \SyshexTime 4
General: Initial version 4	Remove: dependency to erw-l3 4
v1.1	v1.3
General: Add: dependency to erw-l3 . . 4	General: Misc: cleanup 4
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v1.2	General: Add: \timestamp:nn 4
General: Add: \syshex_date: 4	Remove: \syshex_date: 4
Add: \syshex_date_hex: 4	Remove: \syshex_date_hex: 4
Add: \syshex_jobname_dec: 4	Remove: \syshex_jobname_dec: . . . 4
Add: \syshex_time_dec: 4	Remove: \syshex_time_dec: 4
Add: \syshex_time_hex: 4	Remove: \syshex_time_hex: 4
Remove: \SyshexDateHex 4	Rename: syhex to timestamp 4
Remove: \SyshexDate 4	v1.5
Remove: \SyshexFilename 4	General: Add: @_datetime_join:nnn
Remove: \SyshexTimeHex 4	(fixes a bug) 4

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Part IV

Implementation

1 Opening

```
1 <@@=timestamp>
2 \ExplSyntaxOn
```

2 Backend

```
3 \msg_new:nnn{__timestamp}{datetime / base}{Calling~#1,~arg~must~be~'dec|hex'}
4 \msg_new:nnn{__timestamp}{datetime / period}{Calling~#1,~arg~must~be~'date|time|datetime'}
```

```
__timestamp_date:N
__timestamp_date_dec:
__timestamp_date_hex:
5 \cs_new:Nn __timestamp_date_dec:
6 {
7   \int_eval:n
8   {
9     \c_sys_year_int * 10000
10    +\c_sys_month_int * 100
11    +\c_sys_day_int * 1
12  }
13 }
14 \cs_new:Nn __timestamp_date:N{\int_to_hex:n{__timestamp_date_dec:}}
15 \cs_new:Nn __timestamp_date_hex:{\int_to_hex:n{__timestamp_date_dec:}}

(End definition for __timestamp_date:N, __timestamp_date_dec:, and __timestamp_date_hex:.)
```

```
__timestamp_time_dec:
__timestamp_time_hex
16 \cs_new:Nn __timestamp_time_dec:
17 {
18   \int_eval:n
19   {
20     \c_sys_hour_int * 100
21     +\c_sys_minute_int * 1
22   }
23 }
24 \cs_new:Nn __timestamp_time_hex:{\int_to_hex:n{__timestamp_time_dec:}}

(End definition for __timestamp_time_dec: and __timestamp_time_hex.)
```

```
__timestamp_datetime_base:n
__timestamp_datetime_dec:n
__timestamp_datetime_join:nn
__timestamp_datetime_hex:n
__timestamp_datetime_period:n
25 \cs_new:Nn __timestamp_datetime_base:n
26 {
27   \int_case:nnTF{#1}
28   {
29     {10}{dec}
30     {16}{hex}
31   }
32   {\c_empty_tl}
33   {\msg_error:nnn{__timestamp}{datetime / base}{__timestamp_datetime_base:n{#1}}}
34 }
35 \cs_new:Nn __timestamp_datetime_join:nnn{#1#2#3}
```

```

36 \cs_new:Nn\__timestamp_datetime_join:nn{\__timestamp_datetime_join:nnn{#1}{\g__timestamp_delim
37 \cs_new:Nn\__timestamp_datetime_period:n
38 {
39   \str_case:nnTF{#1}
40   {
41     {date}{date}
42     {time}{time}
43     {datetime}{datetime}
44   }
45   {\c_empty_tl}
46   {\msg_error:nnn{\__timestamp}{ datetime / period }{\__timestamp_datetime_period:n{#1}}}
47 }
48 \cs_new:Nn\__timestamp_datetime_dec: {\__timestamp_datetime_join:nn{\__timestamp_date_dec:}{\
49 \cs_new:Nn\__timestamp_datetime_hex: {\__timestamp_datetime_join:nn{\__timestamp_date_hex:}{\

```

(End definition for __timestamp_datetime_base:n and others.)

__timestamp_timestamp:nn

```

50 \cs_new:Nn\__timestamp_timestamp:nn
51 {
52   \exp_args:No
53   \use:c{\__timestamp_\__timestamp_datetime_period:n{#1}_\__timestamp_datetime_base:n{#2}:}
54 }
55 \cs_new_protected:Nn \syshex_set_delim:nn
56 {
57   \use:c{tl_gset:N#1}
58   \g__timestamp_delim_str{#2}
59 }

```

(End definition for __timestamp_timestamp:nn.)

```

60 \keys_define:nn{\__timestamp}
61 {
62   timestamp / delim .code:n =
63   {
64     \exp_last_unbraced:No
65     \syshex_set_delim:nn{n}{#1}
66   },
67   timestamp / delim .value_required:n = true,
68   timestamp / delim .default:n = {-},
69   timestamp / delim .initial:n = {-},
70 }

```

3 Frontend

```

71 \cs_new:Nn\syshex_option:n
72 {
73   \keys_set:nn{\__timestamp}{#1}
74 }
75 \cs_new:Nn\erw_timestamp:nn
76 {
77   \__timestamp_timestamp:nn{#1}{#2}
78 }
79 \cs_new:Nn\erw_timestamp:

```



```
80 {  
81   \__timestamp_timestamp:nn{datetime}{16}  
82 }
```

4 Document

```
83 \NewDocumentCommand\Timestamp{0{datetime}E{^}{{16}}}  
84 {  
85   \erw_timestamp:nn{#1}{#2}  
86 }
```

5 Closing

```
87 \ExplSyntaxOff
```