

# The `dynamicnumber` package\*

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October 4, 2015

## 1 Introduction

Dynamic Number dynamically typesets values generated in different kinds of scripts in LaTeX through the use of symbolic links. The aim is to reduce errors resulting from out-of-date numbers by directly setting them in the number generating file and importing a symbolic link in the LaTeX source file.

**Attention!** The name “symbolic link” is not related to UNIX symbolic links.

## 2 Usage

<code>\dndeclare</code>	Declares a dynamic number (dn) list. By creating a list, variables can be saved and loaded for use in the document. The mandatory argument is the list name.
<code>\dnsetcurrent</code>	This environment does nothing. Sets the current dn list. The mandatory argument specifies the list name. This command is very useful if multiple lists are used, so you do not always have to specify the dn list if it is not the current one.
<code>\dncurrent</code>	Returns the name of current dn list. Returns the current dn list and takes no arguments. This can be useful for debugging purposes.
<code>\dnload</code>	Load dn list <code>\name.dnlist</code> . Loads the dn list whose name is passed as mandatory argument. This argument should only include the list-name and <i>not</i> the filename. It sets the current dn list to this list.
<code>\dnget</code>	Get symbolic link value. Loads the symbolic link’s value from the current dn list if no optional argument is present (optional argument is passed first). Otherwise, the optional argument specifies the dn list containing the symbolic link

## 3 Implementation

Load all required packages.

```
1 \RequirePackage{pgfkeys}
2 \RequirePackage{xparse}
```

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\*This document corresponds to `dynamicnumber` v0.1, dated 2015/10/04.

`\@IfNoValueOrEmptyTF` Tests if a parameter is empty using `expl3`. Performs a double check to make sure it really is empty. This is based on this [StackExchange](#) post.

```

3 \ExplSyntaxOn
4 \DeclareExpandableDocumentCommand{\@IfNoValueOrEmptyTF}{mmm}
5 {
6   \IfNoValueTF{#1}{#2}
7   {
8     \end{macrocode}
9     Order: |{argument}{if empty}{if not empty}|
10    \begin{macrocode}
11    \tl_if_empty:nTF {#1} {#2} {#3}
12  }
13 }
14 \ExplSyntaxOff

```

`\dndeclare` The `\dndeclare` macro defines a list name and defines a `pgfkey` that stores all symbolic links and their values. It always is a subdirectory of `/dynamicnumber:`  
`/dynamicnumber/⟨name⟩/`

```

15 \DeclareDocumentCommand{\dndeclare}{m}{%
16   \pgfkeys{%
17     /dynamicnumber/#1/.is family,
18     /dynamicnumber/#1/.unknown/.style = {%
19       \pgfkeyscurrentpath/\pgfkeyscurrentname/.initial = ##1%
20     }
21   }%
22 }

```

`\dnsetcurrent` `\dnsetcurrent{⟨name⟩}` sets the current dn list to `⟨name⟩`. If no list was previously set, the `\dnsetcurrent` command is defined and set to `⟨name⟩`.

```

23 \DeclareDocumentCommand{\dnsetcurrent}{m}{%
24   \@ifundefined{dncurrent}{%
25     \end{macrocode}
26     \begin{macro}{\dncurrent}
27     Stores the current dn list used in the |\dnget| command.
28     \begin{macrocode}
29     \DeclareDocumentCommand{\dncurrent}{-}{#1}%
30     \end{macrocode}
31     \end{macro}
32     \begin{macrocode}
33 }
34 {%
35 \RenewDocumentCommand{\dncurrent}{-}{#1}%
36 }%
37 }

```

`\dnload` Loads a dn list from file `⟨load⟩.dnlist` and executes all commands in this file after a check if the file exists.

```

38 \DeclareDocumentCommand{\dnload}{m}{%
39   \IfFileExists{#1.dnlist}{%

```

```

40      \newread\ccinstream
41      \immediate\openin\ccinstream=#1.dnlist
42      \@whiles\unless\ifeof\ccinstream\fi{%
43          \immediate\read\ccinstream to \@auxcommand
44          \@auxcommand
45      }%
46      \immediate\closein\ccinstream%
47      \dnsetcurrent{#1}%
48  }{}%
49 }

```

**\dnget** Get the value stored in a specific dn list entry. A dn list can be specified (hence optional argument), otherwise the current list will be used.

```

50 \DeclareDocumentCommand{\dnget}{0{} m}{%
51 \@IfNoValueOrEmptyTF{#1}{%
52     \pgfkeysvalueof{/dynamicnumber/\dncurrent/#2}}{%
53     \pgfkeysvalueof{/dynamicnumber/#1/#2}}%
54 }
55 \endinput
56 }

```