

The KOMA-Script package `tocstyle`*

Markus Kohm

2017/02/23

While the main classes of the KOMA-Script bundle were made, there were several ideas for formatting the table of contents and lists of floats, but almost none of them were implemented. One reason was, that the KOMA-Script author didn't like to change the L^AT_EX kernel at a class, because this may result in several problems with other packages. The package `tocstyle` will fill the gap. If it conflicts with another package, you simply may decide not to use it.

Since KOMA-Script 3.20 most of the features of `tocstyle` are also provided by other KOMA-Script packages like `tocbasic`.

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*This is version v0.2i-alpha of file `tocstyle.dtx`.

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1. Package Status

Package `tocstyle` has alpha status for a very long time (since 2007), despite the fact that it was very stable all over the years. The main reason for this is that it was an experiment and I always intended to make a better successor. Another reason was, that there are known issues, which are hardly to fix. So `tocstyle` never became an official part of KOMA-Script. Nevertheless it has been published with KOMA-Script, because I thought it would be an useful addition. I never thought that the interim status of the package would be for more than eight years.

With KOMA-Script 3.20 several features of `tocstyle` can be found also in `tocbasic`. I recommend to use that official and essential part of KOMA-Script instead of `tocstyle` whenever possible. Nevertheless, I plan to ensure

the compatibility of `tocstyle` with new releases of KOMA-Script for at least already existing, unchanged documents as long as it is possible. But expect that `tocstyle` will move from KOMA-Script bundle to another package, e. g., KOMA-Script-obsolete or a stand-alone package.

2. How It Works

Loading the package `tocstyle` will redefine the kernel macro `\@starttoc`. Using the redefined `\@starttoc` will redefine `\@dottedtocline`, `\l@part` down to `\l@subparagraph`, `\l@figure`, and `\l@table`, if and only if `tocstyle` wasn't deactivated for all TOCs or this TOC. Usage the redefined `\@dottedtocline` will redefine `\numberline`.

Redefining `\@starttoc`, `\@dottedtocline`, and `\numberline` will activate the features of `tocstyle` for all lists that uses these, e.g. table of contents, list of figures and list of tables at the standard or the KOMA-Script classes. But while not all classes uses `\@dottedtocline` and `\@numberline` for all entries to table of contents and list of floats the package redefines some other macros that are typically used for those entries. These are e.g. `\l@part`, `\l@chapter` and some more. If the class even does not use those macros, you may not use `tocstyle` to change the lists. The term TOC will be used for all kind of list, that may be processed by `tocstyle`. The package tests whether the original kernel macros `\@starttoc`, `\@dottedtocline`, and `\numberline` were used or not and warns if not.

Package `tocstyle` needs some more information. For the standard and the KOMA-Script classes these informations may be detected by the package. If the result is not the expected, you may configure these informations manually.

The entries of every TOC hat a depth. See the counter `tocdepth` for more information about the depth. You may change several settings for the entries of either all depths of all TOCs, all depths of one TOC, or one depth of one TOC.

But most users will not need to set up `tocstyle` at this low level. They simply will select one of the predefined styles and maybe select one of the optional features.

3. Optional Features

Optional features will be selected using a package option while loading the package or using the package option as a global option loading the class using `\documentclass`. Optional features change general behaviour of all TOCs.

`tocindentauto`
`tocindentmanual`

With option `tocindentauto` all widths at the TOCs are calculated by

`tocstyle`. The calculation of the width needs at least one \LaTeX run with all TOC entries. So you need at least three \LaTeX runs:

- one to write all the TOC entries to the TOC file
- one with the known TOC entries from the TOC file but unknown widths
- one with the known TOC entries from the TOC file and known widths

If the TOC entries changed between the second and the third run — e.g. because of page numbers changed — you'll need one more run (and so on).

Note: The widths of all entries of same depth and same TOC are same. Don't ask for less width of page numbers at the first than the last TOC page!

`tocgraduated`
`tocflat`
`tocfullflat`

The option `tocgraduated` selects the graduated version of all TOCs. You know the graduated version from the standard classes. Entries of lower depth are indented against entries of higher depth. This may e.g. look like:

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The option `tocflat` selects the flat—aka left aligned—version of all TOCs. You know the flat version from the KOMA-Script classes using option `tocleft`. This may e.g. look like:

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The option `tocfullflat` is similar to flat version of all TOCs, but there is even no box of same width for the numbers of all entries. This may e.g. look like:

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Default is option `tocgraduated`.

`tocbreaksstrict` Default option `tocbreaksstrict` sets a lot of penalties before and after
`tocbreakscareless` TOC entries to avoid page break between a TOC entry and it's parent. But
sometimes you may like to allow more page breaks. You may use option
`tocbreakscareless` for this.

`toctextentriesindented` With default option `toctextentriesleft` unnumbered TOC entries, e.g.
`toctextentriesleft` from KOMA-Script command `\addchap`, are indented only as wide as the
number of numbered TOC entries of the same level are. But with option
`toctextentriesindented` these are indented as if they have an empty
number.

4. Using TOC Styles

Package `tocstyle` hat several predefined toc styles. Most users will never need to define their own toc style but only select one of the predefined and maybe configure it by one of the options described at the previous section.

`\usetocstyle` You may set the style of one or all TOCs. If you want to set the style of all TOCs, you'd simply say `\usetocstyle{<style>}`. This will set all settings of the given style to all TOCs. Individual settings will overwrite this generall setting.

Table 1: Predefined TOC Styles

standard	A style similar to the standard classes. All width are predefined to the width of the standard classes, but may be overwritten by the general options (see section 3). The depth -1 (part) and 0 (chapter) are set in bold face (<code>\bfseries</code>). If no depth 0 was found at the TOC, depth 1 (section) will be set in bold face, too. All other depth will be set in normal font. Depth -1 (part) will be set using <code>\large</code> . The font changes are valid for the page numbers, too.
KOMAlike	A style similar to the KOMA-Script classes. This is almost the same like standard , but instead of bold face <code>\usekomafont{disposition}</code> will be used if <code>\usekomafont</code> was defined and sans serif, bold face (<code>\sffamily\bfseries</code>) if not.
classic	Like KOMAlike but all page numbers are set using normal font.
allwithdot	Like classic but dots between entry text and page numbers are used at all depths.
noonewithdot	Like classic but not dots between entry text and page numbers are used.
nopagecolumn	Like noonewithdot but also the gap between text and page numbers is omitted. This means, that the page numbers are set 1 em after the text.

If you use `\usetocstyle[⟨TOC⟩]{⟨style⟩}`, only the style of the given TOC will be set. This will be done *after* the general setting. Only individual settings of single features may overwrite the setting of the style.

The table 1 shows the predefined styles, that may be used as mandatory argument of `\tocstyle`. The optional argument `⟨TOC⟩` is the shortcut (file extension) of the TOC. Examples of known shortcuts are shown at table 2.

Note: Before you're setting a style the style of the TOCs are unspecified. This means that some entries may be set using `\tocstyle` others may not.

`\deactivatetocstyle` Both commands have one optional argument `⟨TOC⟩`. You may deactivate the influence of `\tocstyle` for a TOC and reactivate it. If you use `\deactivatetocstyle` without the optional argument or empty optional argument, the influence of `\tocstyle` for all TOCs will be deactivated and may be reactivated only using `\reactivatetocstyle` without the optional argument or empty optional argument too.

Table 2: Known TOC Shortcuts

<code>toc</code>	Table of contents of almost all known classes.
<code>lof</code>	List of figures of almost all known classes.
<code>lot</code>	List of tables of almost all known classes.
<code>lol</code>	List of listings of package listings. Currently the usability of listings with <code>tocstyle</code> is not recommended. Maybe it works, maybe not. Maybe you should try <code>\deactivatetocstyle[lol]</code> .

After deactivation of `tocstyle` for one TOC or all TOCs you may continue configuring TOCs. All these changes will be used after reactivation.

5. Setting-up Single Features

At the previous section you've learned how to select a predefined TOC style. You were also told, that you may change one or more features against the used predefined TOC style for one or all depth of one or all TOCs. Now you will learn how to do this.

`\settocfeature`
`\settocstylefeature`

These commands are used to set a single feature either of all depth of all TOCs (`\settocfeature {<feature>} {<command>}`) or `\settocstylefeature {<feature>} {<commands>}`, or of all depth of a single TOC (`\settocfeature [TOC] {<feature>} {<commands>}`), or of a single depth of all TOCs (`\settocstylefeature [depth] {<feature>} {<commands>}`), or of a single depth of a single TOC (`\settocfeature [TOC] [depth] {<feature>} {<commands>}`).

Parameter `<commands>` is a list of commands. In most cases these must not be commands, that need an argument. So you should e.g. not use `\textbf` but `\bfseries` to switch to bold face. Parameter `<feature>` is the feature, that may be configured with parameter `<commands>`. All known features are shown at table 3.

The order of used commands for a feature is

1. commands for all depths of all TOCs,
2. commands for all depth of a single TOC,
3. commands for a single depth of all TOCs,
4. commands for a single depth of a single TOC,

and settings of `\usetocstyle` may be overwritten by `\settocfeature` and `\settocstylefeature`.

Table 3: Features that May Be Set

dothook	will be executed before any dot of the dot line
entryhook	hook before the entry will be set
entryvskip	initial vertical skip amount (if not set 0pt plus .2pt will be used)
leaders	commands for fillin the gap between entry text and page number (if not set the default leaders command with dots will be used)
pagenumberbox	the box command for setting the page number (if not set the default box of with <code>\@pnumwidth</code> will be used); note, that this has to be a command with exactly one argument
pagenumberhook	hook before the page number will be set at the page number box
parfillskip	add this amount to the default value of <code>\parfillskip</code> after setting up all lengths
raggedhook	the only allowed values here are <code>\raggedright</code> or nothing
spaceafternumber	amount of minimum space after the entry number, if the needed width will be calculated automaticly

6. Defining New TOC Styles

Now you know how to select a predefined TOC style and how to change single features. But wouldn't it be nice to define your own TOC style?

`\newtocstyle` You may do this using `\newtocstyle[⟨parent style⟩][⟨exclude features⟩]{⟨style name⟩}{⟨\settocstylefeature-commands⟩}`. If you used the optional argument `⟨parent style⟩` all features of the parent style will be part of the new style, before overwriting them with the features of the `⟨\settocstylefeature-commands⟩`. You should not use any other commands at the last argument. But at `\newtocstyle` the command `\settocfeature` becomes an alias for `\settocstylefeature` to avoid too much mistakes.

The second optional argument is a comma separated list of feature names. If it is used, these features of the parent style (and all ancestors of the parent) will not be part of the new style.

`\aliastoc` Using `\aliastoc{⟨original-TOC⟩}{⟨alias-TOC⟩}` you may define an alias for a TOC. The first argument is the original TOC for that the second argument should be the alias. An alias-TOC will be processed with all settings, that were done for the original-TOC. Internally this command is used as default for the optional, first argument of `\showtoc`.

7. Processing a TOC

While \LaTeX inputs a toc file it processes the commands of the TOC. These commands mainly produce the entries of the toc. Some commands are only available or valid while a TOC is processed. But be careful: Some of these are read-only commands. Changing such a read-only command may result in various errors!

`\@starttoc` The internal command `\@starttoc` is defined by the \LaTeX kernel. It is used by package and class authors to build commands like `\tableofcontents` or `\listoffigures`. Without using it you will not get a toc file. `tocstyle` redefines it, to add pre- and post-processing commands. The original definition found by `tocstyle` will be used inside the redefinition.

`\showtoc`

`\showtoc [⟨preprosession⟩]{⟨TOC⟩}` is an addition of `tocstyle`. Using it will produce a copy of TOC and process this copy. The copy will be done just after creating the original TOC. The copy will be an alias for the original file. The extension of the copy is the generated alias if `⟨TOC⟩`. You may generate the alias using `\aliastoc` at the optional argument of `\showtoc`. The default for this optional argument will be `\aliastoc\tocstyleTOC\tocstyleAliasTOC` and the default alias `\tocstyleAliasTOC` will be `\tocstyleTOC` extended by a number. The first TOC example at section 3 was made using

```
\showtoc [{%
```

```

\aliastoc{\tocstyleTOC}{toc}%
\usetocstyle[toc]{standard}%
\settocfeature[toc]{raggedhook}{\raggedright}%
\selecttocstyleoption{tocgraduated}%
}}{toc}

```

If you want to show a copy of the table of contents, that shows only depth 1 of the headlines you may simply use:

```

\showtoc[{\%
\expandafter\value{tocdepth}=1\relax
\aliastoc{\tocstyleTOC}{toc}%
}]{toc}

```

or

```

\newcounter{savedtocdepth}
\setcounter{savedtocdepth}{\value{tocdepth}}
\setcounter{tocdepth}{1}
\showtoc{toc}
\setcounter{tocdepth}{\value{savedtocdepth}}

```

`\tocstyleTOC` These are read-only macros. While processing a TOC using `\@starttoc` or `\showtoc`, `\tocstyleAliasTOC` is the shortcut, that is valid for the features and `\tocstyleTOC` is valid for the file extension to be used.

`\tocstyledepth` This is a read-only macro. While processing a single toc entry with `\@dottedtocline` this is the depth (first argument of `\@dottedtocline`) of this entry. Most users will never need this, but it is often used internally. Because of this *you should never change it!*

`\iftochasdepth` Using `\iftochasdepth{<TOC>}{<depth>}{<true>}{<false>}` you may test, if an entry of a given depth was already output to a TOC. If so the commands of argument `<true>` will be processed. If not so the commands of argument `<false>` will be processed.

8. Configuration file

There's another feature for new toc styles. If there's a file `tocstyle.cfg` it will be loaded at the end of the package. This is usefull to define your own toc styles.

9. Implementation

```

1 \PackageWarningNoLine{tocstyle}{%
2   THIS IS AN ALPHA VERSION!\MessageBreak
3   USAGE OF THIS VERSION IS ON YOUR OWN RISK!\MessageBreak
4   EVERYTHING MAY HAPPEN!\MessageBreak
5   EVERYTHING MAY CHANGE IN FUTURE!\MessageBreak
6   THERE IS NO SUPPORT, IF YOU USE THIS PACKAGE!\MessageBreak

```

```

7 Maybe it would be better, not to load this package%
8 }

```

9.1. Option

Options change general behaviour of TOCs.

`\selecttocstyleoption`

```

9 \newif\if@tocstyle@penalties
10 \newif\iftocstyle@autolength
11 \newif\iftocstyle@indentnotnumbered
12 \newcount\tocstyle@indentstyle\tocstyle@indentstyle=\z@
13 \newcommand*\selecttocstyleoption}[1]{%
14   \begingroup
15     \edef\@tempa{#1}%
16     \edef\@tempb{tocbreaksstrict}%
17     \ifx\@tempa\@tempb\aftergroup\@tocstyle@penaltiestrue\else
18       \edef\@tempb{tocbreakscareless}%
19       \ifx\@tempa\@tempb\aftergroup\@tocstyle@penaltiesfalse\else
20         \edef\@tempb{tocindentauto}%
21         \ifx\@tempa\@tempb\aftergroup\tocstyle@autolengthtrue\else
22           \edef\@tempb{tocindentmanual}%
23           \ifx\@tempa\@tempb\aftergroup\tocstyle@autolengthfalse\else
24             \edef\@tempb{tocgraduated}%
25             \ifx\@tempa\@tempb
26               \aftergroup\tocstyle@indentstyle\aftergroup\z@
27             \else
28               \edef\@tempb{tocflat}%
29               \ifx\@tempa\@tempb
30                 \aftergroup\tocstyle@indentstyle\aftergroup\@ne
31                 \aftergroup\relax
32               \else
33                 \edef\@tempb{tocfullflat}%
34                 \ifx\@tempa\@tempb
35                   \aftergroup\tocstyle@indentstyle\aftergroup\tw@
36                   \aftergroup\relax
37                 \else
38                   \edef\@tempb{toctextentriesindented}%
39                   \ifx\@tempa\@tempb\aftergroup\tocstyle@indentnotnumberedtrue
40                 \else
41                   \edef\@tempb{toctextentriesleft}%
42                   \ifx\@tempa\@tempb
43                     \aftergroup\tocstyle@indentnotnumberedfalse
44                   \else
45                     \PackageError{tocstyle}{unknown option ‘#1’}{%
46                       You’ve told me to select toc style option
47                       ‘#1’,\MessageBreak
48                       but tocstyle doesn’t know an option named ‘#1’}%
49                   \fi
50                 \fi

```

```

51             \fi
52         \fi
53     \fi
54 \fi
55 \fi
56 \fi
57 \fi
58 \endgroup
59 }

chapter Do we have \chapter and \l@chapter?
nochapter 60 \newif\iftochaschapter\tochaschapterfalse
\iftochaschapter 61 \ifcsname l@chapter\endcsname
62 \ifcsname chapter\endcsname
63 \tochaschaptertrue
64 \fi
65 \fi

tocbreaksstrict Switch on extended pernalties.
tocbreakscareless 66 \DeclareOption{tocbreaksstrict}{\selecttocstyleoption\CurrentOption}
67 \DeclareOption{tocbreakscareless}{\selecttocstyleoption\CurrentOption}

tocindentauto
tocindentmanual 68 \DeclareOption{tocindentauto}{\selecttocstyleoption\CurrentOption}
69 \DeclareOption{tocindentmanual}{\selecttocstyleoption\CurrentOption}

toctextentriesindented
toctextentriesleft 70 \DeclareOption{toctextentriesindented}{\selecttocstyleoption\CurrentOption}
71 \DeclareOption{toctextentriesleft}{\selecttocstyleoption\CurrentOption}

tocgraduated
tocflat 72 \DeclareOption{tocgraduated}{\selecttocstyleoption\CurrentOption}
tocfullflat 73 \DeclareOption{tocflat}{\selecttocstyleoption\CurrentOption}
74 \DeclareOption{tocfullflat}{\selecttocstyleoption\CurrentOption}

Defaults and others:
75 \ExecuteOptions{tocbreaksstrict,tocindentauto,tocgraduated,%
76 toctextentriesleft}
77 \ProcessOptions\relax

78 \ifcsname if@tocleft\endcsname
79 \expandafter\let\csname if@tempswa\expandafter\endcsname
80 \csname if@tocleft\endcsname
81 \else
82 \@tempswafalse
83 \fi
84 \if@tempswa
85 \PackageWarningNoLine{tocstyle}{%
86 You should not use class option 'toc=flat'!\MessageBreak

```

```

87   This may result in errors or unexpected results.\MessageBreak
88   I'll try to deactivate 'toc=flat', now.\MessageBreak
89   You may use package options 'tocflat' and\MessageBreak
90   'tocindentauto' instead of 'toc=flat'}%
91   \csname @tocleftfalse\endcsname
92 \fi

```

9.2. Body

There are two parts at `tocstyle`:

- redefining internal \LaTeX kernel macros,
- defining new macros and redefining class macros.

Redefining \LaTeX kernel macros may not be switched of. But redefining class macros will only be on demand.

9.2.1. Redefining \LaTeX Kernel Macros

Some \LaTeX kernel macros must be redefined to add the new functionality. Before redefining them, we test against the definition at kernel 2005/12/01

```

\@starttoc The original definition will be extended by defaults for \parskip, \parindent
\tocstyle@saved@@starttoc and \parfillskip and storage of the shortcut of the current TOC.
93 \newcommand*\tocstyle@saved@starttoc{}
94 \let\tocstyle@saved@starttoc\@starttoc
95 \renewcommand*\{\@starttoc}[1]{%
96   \tocstyle@pre@starttoc{#1}%
97   \tocstyle@saved@starttoc{#1}%
98   \tocstyle@post@starttoc{#1}%
99 }

\tocstyle@saved@dottedtocline For saving the unchanged definition (at \begindocument):
100 \newcommand*\{\tocstyle@saved@dottedtocline}{}

\tocstyle@dottedtocline Implement new definition and redefine:
101 \newcommand*\{\tocstyle@dottedtocline}[5]{%
102   \let\numberline\tocstyle@numberline
103   \ifnum #1>\c@tocdepth \else
      Penalty feature: no page break between higher and lower depths.
104     \if@tocstyle@penalties
105       \begingroup
106         \@tempcnta 20010
107         \advance \@tempcnta by -#1
108         \ifnum \@tempcnta>\lastpenalty
109           \aftergroup\penalty\aftergroup\@lowpenalty
110         \fi

```

```

111     \endgroup
112     \fi
    Activation of all features for this TOC and depth:
113     \edef\tocstyledepth{#1}%
114     \tocstyle@activate@features
    Similar to kernel command but if feature entryvskip was set use \addvspace:
115     \ifx\tocstyle@feature@entryvskip\relax
116         \vskip \z@ \@plus.2\p@
117     \else
118         \addvspace{\tocstyle@feature@entryvskip}%
119     \fi
120     {%
    Preinitialization of lengths and skips and then call a hook
121     \parskip \z@ \parindent \z@ \leftskip \z@ \rightskip \z@
122     \tocstyle@feature@raggedhook
    Set number indent to \@tempdimb and text indent to \@tempdima.
123     \@tempdima #3\relax
124     \@tempdimb #2\relax
125 <trace>     \typeout{number indent by \string\l@... (\tocstyleTOC, \tocstyledepth)
126 <trace>     \typeout{text indent by \string\l@... (\tocstyleTOC, \tocstyledepth):
    Calc auto lengths. Use max. of last run of parents if available.
127     \ifnum #1>\z@\relax
128         \@tempcnta #1\relax \advance\@tempcnta \m@ne
129         \ifcsname tocstyle@maxskipwidth@\tocstyleTOC @\the\@tempcnta\endcsname
130             \ifcsname tocstyle@maxnumwidth@\tocstyleTOC @\the\@tempcnta\endcsname
131                 \@tempdimb
132                 \csname tocstyle@maxskipwidth@\tocstyleTOC @\the\@tempcnta\endcsname
133                 \advance\@tempdimb
134                 \csname tocstyle@maxnumwidth@\tocstyleTOC @\the\@tempcnta\endcsname
135             \fi
136         \fi
137     \fi
138 <trace>     \typeout{number indent by parent (\tocstyleTOC, \tocstyledepth): \spa
139     \ifcsname tocstyle@skipwidth@\tocstyleTOC @#1\endcsname
140         \ifdim \@tempdimb>
141             \csname tocstyle@skipwidth@\tocstyleTOC @#1\endcsname\relax
142             \expandafter\xdef\csname tocstyle@skipwidth@\tocstyleTOC
143                 @#1\endcsname{\the\@tempdimb}%
144         \fi
145     \else
146         \expandafter\xdef\csname tocstyle@skipwidth@\tocstyleTOC
147             @#1\endcsname{\the\@tempdimb}%
148     \fi
149     \iftocstyle@autolength
150         \ifcsname tocstyle@maxskipwidth@\tocstyleTOC @#1\endcsname
151             \@tempdimb \csname tocstyle@maxskipwidth@\tocstyleTOC @#1\endcsname

```

```

152         \relax
153     \fi
154     \ifcsname tocstyle@maxnumwidth@\tocstyleTOC @#1\endcsname
155         \@tempdima \csname tocstyle@maxnumwidth@\tocstyleTOC @#1\endcsname
156         \relax
157     \fi
158 <trace>         \typeout{text indent calculated (\tocstyleTOC, \tocstyledepth): \th
159 <trace>         \typeout{number indent calculated (\tocstyleTOC, \tocstyledepth): \t
160     \else
161         \@tempdimb #2\relax
162 <trace>         \typeout{number indent explicite (\tocstyleTOC, \tocstyledepth): \t
163     \fi
164     \ifcsname tocstyle@unumwidth@\tocstyleTOC @\endcsname
165         \ifdim \@tempdima>
166             \csname tocstyle@unumwidth@\tocstyleTOC @\endcsname\relax
167             \expandafter\xdef\csname tocstyle@unumwidth@\tocstyleTOC
168                 @\endcsname{\the\@tempdima}%
169         \fi
170     \else
171         \expandafter\xdef\csname tocstyle@unumwidth@\tocstyleTOC
172             @\endcsname{\the\@tempdima}%
173     \fi
174     \ifcase\tocstyle@indentstyle\relax\else
175         \@tempdimb \z@
176         \ifcsname tocstyle@maxunumwidth@\tocstyleTOC @\endcsname
177             \@tempdima \csname tocstyle@maxunumwidth@\tocstyleTOC @\endcsname
178             \relax
179         \fi
180 <trace>         \typeout{text noindent (\tocstyleTOC, \tocstyledepth): \the\@tempdi
181 <trace>         \typeout{number noindent (\tocstyleTOC, \tocstyledepth): \the\@temp
182     \fi

```

Advance instead of set, because of the hook above:

```

183     \advance\parindent \@tempdimb\@afterindenttrue
184     \advance\leftskip \parindent
185     \advance\rightskip \@tocrmarg
186     \parfillskip -\rightskip
187     \ifx\tocstyle@feature@parfillskip\relax\else
188         \advance\parfillskip \tocstyle@feature@parfillskip\relax
189     \fi
190     \interlinepenalty\@M
191     \leavevmode
192     \advance\leftskip \@tempdima
193     \null\nobreak

```

\hskip\leftskip optional moved to \numberline

```

194     \iftocstyle@indentnotnumbered\else
195         \hskip -\leftskip
196     \fi

```

Change at start of the entry

197 \tocstyle@feature@entryhook

Similar to kernel command but if feature `leaders` was set use this instead of the default `leaders`. And if feature `dothook` was set (default is `\normalfont`) use this at the default `leaders`.

```

198       {#4}\nobreak
199       \ifx\tocstyle@feature@leaders\relax
200       \leaders\hbox{$\m@th
201       \mkern \@dotsep mu\hbox{\tocstyle@feature@dothook .}%
202       \mkern \@dotsep mu$}\hfill
203       \else
204       \tocstyle@feature@leaders
205       \fi
206       \nobreak
207       \ifx\tocstyle@feature@pagenumberbox\relax
208       \hb@xt@\@pnumwidth{\hfil\tocstyle@feature@pagenumberhook #5}%
209       \else
210       \tocstyle@feature@pagenumberbox{\tocstyle@feature@pagenumberhook #5}%
211       \fi
212       \par
213     }%

```

Last change is, another penalty change:

```

214     \if\tocstyle@penalties
215       \bgroup
216       \@tempcnta 20009
217       \advance\@tempcnta by -#1
218       \edef\reserved@a{\egroup\penalty\the\@tempcnta\relax}%
219       \reserved@a
220     \fi
221   \fi}

```

`\tocstyle@sav@numberline` Define a new `\numberline`, that will do all the job after `\begindocument`
`\tocstyle@numberline` and one to save the original definition.

```

222 \newcommand*{\tocstyle@sav@numberline}{%
223 \newcommand*{\tocstyle@numberline}[1]{%
224 \begingroup
225 \ifx\tocstyle@feature@spaceafternumber\relax
226 \settowidth\@tempdima{\tocstyle@@numberline{#1}\enskip}%
227 \else
228 \settowidth\@tempdima{\tocstyle@@numberline{#1}}%
229 \advance \@tempdima \tocstyle@feature@spaceafternumber\relax
230 \fi
231 \ifcsname tocstyle@numwidth@\tocstyleTOC @\tocstyledepth\endcsname
232 \ifdim \@tempdima >
233 \csname tocstyle@numwidth@\tocstyleTOC @\tocstyledepth\endcsname\relax
234 \expandafter\xdef\csname tocstyle@numwidth@\tocstyleTOC
235 @\tocstyledepth\endcsname{\the\@tempdima}%
236 \fi
237 \else

```

```

238     \expandafter\xdef\csname tocstyle@numwidth@\tocstyleTOC
239     @\tocstyledepth\endcsname{\the\@tempdima}%
240     \fi
241 \endgroup
242 \iftocstyle@indentnotnumbered
243     \hskip -\leftskip
244 \fi
245 \ifcase \tocstyle@indentstyle
246     \hb@xt@\@tempdima{\tocstyle@@numberline{#1}\hfil}%
247 \or
248     \hb@xt@\@tempdima{\tocstyle@@numberline{#1}\hfil}%
249 \else
250     \ifx\tocstyle@feature@spaceafternumber\relax
251         \hbox{\tocstyle@@numberline{#1}\enskip}%
252     \else
253         \hbox{\tocstyle@@numberline{#1}\hskip
254             \tocstyle@feature@spaceafternumber\relax}%
255     \fi
256 \fi
257 }

```

```

\tocstyle@@numberline Do the main work!
258 \newcommand*{\tocstyle@@numberline}[1]{%
259     #1\csname autodot\endcsname
260 }

```

9.2.2. Redefining Class Macros

```

\l@part Try to redefine the toc commands at startup.
\l@chapter 261 \AtBeginDocument{%
\l@section 262 \@ifpackageloaded{tocbasic}{%
\l@subsection 263 \@ifpackagelater{tocbasic}{2016/03/01}{%
\l@subsubsection 264 \PackageWarningNoLine{tocstyle}{%
\l@paragraph 265 Usage of ‘tocstyle’ with new ‘tocbasic’ detected.\MessageBreak
\l@subparagraph 266 This is not an error! You can do this.\MessageBreak
\l@table 267 Nevertheless, you should note, combining ‘tocstyle’\MessageBreak
\l@figure 268 with this version of ‘tocbasic’ will break several\MessageBreak
269 features of ‘tocbasic’. You should use ‘tocstyle’\MessageBreak
270 features instead of ‘tocbasic’ attributes for all\MessageBreak
271 entry changes you want.\MessageBreak
272 You may also get additional warnings because of\MessageBreak
273 redefined ‘\string\numberline’. Ignore them}%
274 }{}%
275 }{}%
276 \@ifpackageloaded{etoc}{%
277 \PackageWarningNoLine{tocstyle}{%
278 Usage of ‘tocstyle’ with ‘etoc’ detected.\MessageBreak
279 I suggest to use either ‘tocstyle’ or ‘etoc’\MessageBreak
280 but not both of them together}%

```

```

281 }{}%
282 \@ifpackageloaded{titletoc}{%
283   \PackageWarningNoLine{tocstyle}{%
284     Usage of 'tocstyle' with 'titletoc' detected.\MessageBreak
285     I suggest to use either 'tocstyle' or 'titletoc'\MessageBreak
286     but not both of them together. I expect even\MessageBreak
287     error messages because of this combination}%
288 }{}%
289 \def\tocstyle@test@level{-1}%
290 \def\tocstyle@test@levelname{part}%
291 \@whiles\ifcsname l@\tocstyle@test@levelname\endcsname\fi{%
292   \setbox\@tempboxa\vbox{\hsize\maxdimen
293     \let\normalcolor\relax
294     \let\color\@gobble
295     \edef\reserved@a{%
296       \expandafter\noexpand\csname l@\tocstyle@test@levelname\endcsname{%
297         \noexpand\tocstyle@l@define{\tocstyle@test@levelname}%
298           {\tocstyle@test@level}%
299       }{}%
300     }%
301     \reserved@a
302   }%
303   \edef\tocstyle@test@levelname{sub\tocstyle@test@levelname}%
304   \edef\tocstyle@test@level{\the\numexpr\tocstyle@test@level+1}%
305 }%
306 \ifnum\tocstyle@test@level<\z@
307   \def\tocstyle@test@level{0}%
308 \fi
309 \def\tocstyle@test@levelname{chapter}%
310 \@whiles\ifcsname l@\tocstyle@test@levelname\endcsname\fi{%
311   \setbox\@tempboxa\vbox{\hsize\maxdimen
312     \let\normalcolor\relax
313     \let\color\@gobble
314     \edef\reserved@a{%
315       \expandafter\noexpand\csname l@\tocstyle@test@levelname\endcsname{%
316         \noexpand\tocstyle@l@define{\tocstyle@test@levelname}%
317           {\tocstyle@test@level}%
318       }{}%
319     }%
320     \reserved@a
321   }%
322   \edef\tocstyle@test@levelname{sub\tocstyle@test@levelname}%
323   \edef\tocstyle@test@level{\the\numexpr\tocstyle@test@level+1}%
324 }%
325 \ifnum\tocstyle@test@level<\@ne
326   \def\tocstyle@test@level{1}%
327 \fi
328 \def\tocstyle@test@levelname{section}%
329 \@whiles\ifcsname l@\tocstyle@test@levelname\endcsname\fi{%

```

```

330 \setbox\@tempboxa\vbox{\hsize\maxdimen
331 \let\normalcolor\relax
332 \let\color\@gobble
333 \edef\reserved@a{%
334 \expandafter\noexpand\csname l@tocstyle@test@levelname\endcsname{%
335 \noexpand\tocstyle@l@define{\tocstyle@test@levelname}%
336 {\tocstyle@test@level}%
337 }{}}%
338 }%
339 \reserved@a
340 }%
341 \edef\tocstyle@test@levelname{sub\tocstyle@test@levelname}%
342 \edef\tocstyle@test@level{\the\numexpr\tocstyle@test@level+1}%
343 }%
344 \def\tocstyle@test@levelname{paragraph}%
345 \@whiles\ifcsname l@tocstyle@test@levelname\endcsname\fi{%
346 \setbox\@tempboxa\vbox{\hsize\maxdimen
347 \let\normalcolor\relax
348 \let\color\@gobble
349 \edef\reserved@a{%
350 \expandafter\noexpand\csname l@tocstyle@test@levelname\endcsname{%
351 \noexpand\tocstyle@l@define{\tocstyle@test@levelname}%
352 {\tocstyle@test@level}%
353 }{}}%
354 }%
355 \reserved@a
356 }%
357 \edef\tocstyle@test@levelname{sub\tocstyle@test@levelname}%
358 \edef\tocstyle@test@level{\the\numexpr\tocstyle@test@level+1}%
359 }%
360 \def\tocstyle@test@level{1}%
361 \def\tocstyle@test@levelname{table}%
362 \@whiles\ifcsname l@tocstyle@test@levelname\endcsname\fi{%
363 \setbox\@tempboxa\vbox{\hsize\maxdimen
364 \let\normalcolor\relax
365 \let\color\@gobble
366 \edef\reserved@a{%
367 \expandafter\noexpand\csname l@tocstyle@test@levelname\endcsname{%
368 \noexpand\tocstyle@l@define{\tocstyle@test@levelname}%
369 {\tocstyle@test@level}%
370 }{}}%
371 }%
372 \reserved@a
373 }%
374 \edef\tocstyle@test@levelname{sub\tocstyle@test@levelname}%
375 \edef\tocstyle@test@level{\the\numexpr\tocstyle@test@level+1}%
376 }%
377 \def\tocstyle@test@level{1}%
378 \def\tocstyle@test@levelname{figure}%

```

```

379 \@whiles\ifcsname l@tocstyle@test@levelname\endcsname\fi{%
380   \setbox\@tempboxa\vbox{\hsize\maxdimen
381     \let\normalcolor\relax
382     \let\color\@gobble
383     \edef\reserved@a{%
384       \expandafter\noexpand\csname l@tocstyle@test@levelname\endcsname{%
385         \noexpand\tocstyle@l@define{\tocstyle@test@levelname}%
386           {\tocstyle@test@level}%
387       }{}%
388     }%
389     \reserved@a
390   }%
391   \edef\tocstyle@test@levelname{sub\tocstyle@test@levelname}%
392   \edef\tocstyle@test@level{\the\numexpr\tocstyle@test@level+1}%
393 }%

```

`\@dottedtocline` This will be used even for undotted toc lines. First check the definition, then redefine.

```

394 \def\@tempa#1#2#3#4#5{%
395   \ifnum #1>\c@tocdepth \else
396     \vskip \z@ \@plus.2\p@
397     {\leftskip #2\relax \rightskip \@tocrmarg \parfillskip -\rightskip
398       \parindent #2\relax\@afterindenttrue
399       \interlinepenalty\@M
400       \leavevmode
401       \@tempdima #3\relax
402       \advance\leftskip \@tempdima \null\nobreak\hskip -\leftskip
403       {#4}\nobreak
404       \leaders\hbox{$\m@th
405         \mkern \@dotsep mu\hbox{.}\mkern \@dotsep
406         mu$}\hfill
407       \nobreak
408       \hb@xt@\@pnumwidth{\hfil \normalfont \normalcolor #5}%
409       \par}%
410   \fi}%
411 \ifx\@dottedtocline\@tempa\else
412   \tocstyle@macrochangewarning\@dottedtocline
413 \fi
414 \let\tocstyle@saved@dottedtocline\@dottedtocline

```

`\numberline` This macro needed to be redefined to calculate the width of the numbers. First of all: check the definition. This is a bit more difficult, because of respecting KOMA-Script:

```

415 \def\@tempa#1{\hb@xt@\@tempdima{#1\autodot\hfil}}%
416 \ifx\numberline\@tempa\else
417   \def\@tempa#1{\hb@xt@\@tempdima{#1\hfil}}%
418   \ifx\numberline\@tempa\else
419     \tocstyle@macrochangewarning\numberline
420   \fi

```

```

421 \fi
422 \let\tocstyle@saved@numberline\numberline
423 }

```

\tocstyle@macrochangewarning

```

424 \newcommand*{\tocstyle@macrochangewarning}[1]{%
425   \PackageWarningNoLine{tocstyle}{%
426     unexpected \string#1\space definition!\MessageBreak
427     You are either using an unknown LaTeX kernel\MessageBreak
428     version, an unknown class or package, that redefines\MessageBreak
429     \string#1, or a \string#1\space
430     redefinition\MessageBreak
431     at the document preamble.\MessageBreak
432     Because of this you may get unexpected results!\MessageBreak
433     Maybe it would be better not to use package tocstyle}%
434   \PackageInfo{tocstyle}{Unexpected definition is:\MessageBreak
435     \meaning#1}%
436 }

```

\tocstyle@l@define

```

\tocstyle@activate@all@l 437 \newcommand*{\tocstyle@activate@all@l}{%
438 \newcommand*{\tocstyle@l@define}[2]{%
439   \advance\leftskip-\@tempdima
440   \edef\@tempa{%
441     \noexpand\global\noexpand\let
442     \expandafter\noexpand\csname tocstyle@saved@l@#1\endcsname
443     \expandafter\noexpand\csname l@#1\endcsname
444     \noexpand\gdef
445     \expandafter\noexpand\csname tocstyle@l@#1\endcsname{%
446       \noexpand\@dottedtocline{#2}{\the\leftskip}{\the\@tempdima}}}%
447   \noexpand\g@addto@macro\noexpand\tocstyle@activate@all@l{%
448     \noexpand\let\expandafter\noexpand\csname l@#1\endcsname
449     \expandafter\noexpand\csname tocstyle@l@#1\endcsname
450   }%
451 }%
452 \PackageInfo{tocstyle}{prepare \expandafter\string
453   \csname l@#1\endcsname\space for redefinition}%
454 \@tempa
455 }

```

9.2.3. New Macros

\showtoc

```

456 \newcommand*{\showtoc}[2][\aliastoc\tocstyleTOC\tocstyleAliasTOC]{%
457   \ifcsname tocstyle@copynome@#2\endcsname
458     \@tempcnta \csname tocstyle@copynome@#2\endcsname\relax
459     \advance\@tempcnta \@ne
460     \expandafter\xdef\csname tocstyle@copynome@#2\endcsname{\the\@tempcnta}%
461   \else

```

```

462 \expandafter\xdef\csname tocstyle@copypname@#2\endcsname{1}%
463 \fi
464 \ifx\@dofilelist\relax\let\@dofilelist\empty\fi
465 \edef\@tempa{\noexpand\g@addto@macro\noexpand\@dofilelist{%
466 \noexpand\tocstyle@copy@toc{#2}{\csname
467 tocstyle@copypname@#2\endcsname}}}%
468 }\@tempa%
469 \begingroup
470 \edef\tocstyleAliasTOC{#2}%
471 \edef\tocstyleTOC{#2\csname tocstyle@copypname@#2\endcsname}%
472 #1
473 \tocstyle@pre@starttoc{#2\csname tocstyle@copypname@#2\endcsname}%
474 \makeatletter
475 \@input{\jobname.#2\csname tocstyle@copypname@#2\endcsname}%
476 \nobreakfalse
477 \tocstyle@post@starttoc{#2\csname tocstyle@copypname@#2\endcsname}%
478 \endgroup
479 }

```

\tocstyle@copy@toc

```

480 \newcommand*{\tocstyle@copy@toc}[2]{%
481 \if@filesw
482 \begingroup
483 \endlinechar=\m@ne

```

While L^AT_EX does not close the files, we have to do it know.

```

484 \immediate\closeout\csname tf@#1\endcsname
485 \immediate\openin\@inputcheck \jobname.#1
486 \immediate\openout\@partaux \jobname.#1#2
487 \loop\unless\ifeof\@inputcheck
488 \immediate\readline\@inputcheck to \@tempa
489 \immediate\write\@partaux{\@tempa}%
490 \repeat
491 \immediate\closeout\@partaux
492 \immediate\closein\@inputcheck
493 \endgroup
494 \fi
495 }

```

\aliastoc Internal use not the real TOC shortcut but another one.

```

496 \newcommand*{\aliastoc}[2]{%
497 \expandafter\edef\csname tocstyle@alias@TOC@#1\endcsname{#2}%
498 }

```

\tocstyle@pre@starttoc Commands before and after the original \starttoc.

```

\tocstyle@post@starttoc 499 \newcommand*{\tocstyle@pre@starttoc}[1]{%
500 \begingroup
501 \expandafter\ifx\csname tocstyle@deactivated@\endcsname\relax
502 \expandafter\ifx\csname tocstyle@deactivated@#1\endcsname\relax\relax

```

```

503         \tocstyle@activetrue
504     \else
505         \tocstyle@activefalse
506     \fi
507 \else
508     \tocstyle@activefalse
509 \fi
510 \iftocstyle@active
511     \let\@dottedtocline\tocstyle@dottedtocline
512     \parskip \z@
513     \parindent \z@
514     \parfillskip \z@\@plus 1fil
515     \ifcsname tocstyle@alias@TOC@#1\endcsname
516         \edef\tocstyleAliasTOC{\csname tocstyle@alias@TOC@#1\endcsname}%
517     \else
518         \edef\tocstyleAliasTOC{#1}%
519     \fi
520     \edef\tocstyleTOC{#1}%
521     \tocstyle@activate@all@l
522 \fi
523 }
524 \newcommand*{\tocstyle@post@starttoc}[1]{%
525     \iftocstyle@active
526     \if@filesw
527         \ifcsname tocstyle@unumwidth@#1\endcsname
528             \protected@write\@auxout{}\{%
529                 \protect\tocstyle@set@width{unum}{#1}{\}%
530                 \csname tocstyle@unumwidth@#1\endcsname}%
531             }%
532         \fi
533         \expandafter\let\expandafter\@tempa
534             \csname tocstyle@depthlist@#1\endcsname
535         \ifx\@tempa\relax\else
536             \expandafter\@for \expandafter\@tempa\expandafter:\expandafter=\@tempa
537             \do {%
538                 \ifcsname tocstyle@numwidth@#1\@tempa\endcsname
539                     \protected@write\@auxout{}\{%
540                         \protect\tocstyle@set@width{num}{#1}{\@tempa}\%
541                         \csname tocstyle@numwidth@#1\@tempa\endcsname}%
542                     }%
543                 \fi
544                 \ifcsname tocstyle@skipwidth@#1\@tempa\endcsname
545                     \protected@write\@auxout{}\{%
546                         \protect\tocstyle@set@width{skip}{#1}{\@tempa}\%
547                         \csname tocstyle@skipwidth@#1\@tempa\endcsname}%
548                     }%
549                 \fi
550             }%
551         \fi

```



```

552     \fi
553     \fi
554 \endgroup
555 }

```

`\tocstyle@set@width` Some classes do not use `\numberline`. This may result in negativ widths (esp. negativ skips). Following special handling of negativ values improves the toc handling of the standard classes. Nevertheless indentation of not numbered entries does not work with such classes!

```

556 \newcommand*{\tocstyle@set@width}[4]{%
557   \iftocstyle@indentnotnumbered
558     \ifdim #4<\z@
559       \expandafter\gdef\csname tocstyle@max#1width@#2@#3\endcsname{%
560         \dimexpr #4/2\relax}%
561     \else
562       \expandafter\gdef\csname tocstyle@max#1width@#2@#3\endcsname{#4}%
563     \fi
564   \else
565     \ifdim #4<\z@
566       \expandafter\gdef\csname tocstyle@max#1width@#2@#3\endcsname{\z@}%
567     \else
568       \expandafter\gdef\csname tocstyle@max#1width@#2@#3\endcsname{#4}%
569     \fi
570   \fi
571 }
572 \AtBeginDocument{%
573   \if@filesw
574     \immediate\write\@auxout{%
575       \string\providecommand*\string\tocstyle@set@width[4]{}%
576     }%
577   \fi
578 }

```

`\tocstyleTOC` Shortcut of the current processed TOC. Empty outside of TOCs.

```

\tocstyleAliasTOC 579 \newcommand*{\tocstyleTOC}{}
580 \newcommand*{\tocstyleAliasTOC}{}

```

`\tocstyledepth` Current depth of the current processed TOC entry.

```

581 \newcommand*{\tocstyledepth}{}

```

`\deactivatetocstyle` You may (de)activate all influence of `tocstyle` either for one or all TOCs.

```

\reactivatetocstyle 582 \newif\iftocstyle@active
583 \newcommand*{\deactivatetocstyle}[1][]{%
584   \expandafter\let\csname tocstyle@deactivated@#1\endcsname\@empty}
585 \newcommand*{\reactivatetocstyle}[1][]{%
586   \expandafter\let\csname tocstyle@deactivated@#1\endcsname\relax}

```

`\settocfeature` The primary command to set the features of a depth of a TOC.

```

\@settocfeature
\@@settocfeature

```

```

587 \newcommand*{\@settocfeature}[1][]{%
588   \kernel@ifnextchar[ {\@settocfeature[{#1}]}{\@settocfeature[{#1}] []}
589 }
590 \def\@settocfeature[#1][#2]#3#4{%
591   \trace \typeout{exclude: \tocstyle@feature@excludelist}%
592   \@expandtwoargs\in@{,#3,}{,\tocstyle@feature@excludelist,}%
593   \ifin@ \else
594     \expandafter\ifcsname tocstyle@feature@#3\endcsname
595     \@namedef{tocstyle@feature@#3@#1@#2}{#4}%
596     \begingroup
597     \expandafter\let\expandafter\@tempa
598     \csname tocstyle@commandlist@#1\endcsname
599     \@expandtwoargs\in@{,\tocstyle@feature@#3@#1@#2,}{,\@tempa,}%
600     \ifin@ \let\@tempa\endgroup \else
601     \edef\@tempa{\endgroup
602       \noexpand\expandafter\noexpand\ifx
603       \noexpand\csname tocstyle@commandlist@#1\noexpand\endcsname\relax
604       \noexpand\expandafter\noexpand\expandafter\noexpand\expandafter
605       \noexpand\def
606       \noexpand\else
607       \noexpand\expandafter\noexpand\expandafter\noexpand\expandafter
608       \noexpand\l@addto@macro
609       \noexpand\fi
610       \noexpand\csname tocstyle@commandlist@#1\noexpand\endcsname%
611       {tocstyle@feature@#3@#1@#2,}}%
612     \fi
613     \@tempa
614   \else
615     \PackageError{tocstyle}{unkown feature ‘#3’}{%
616       You’ve told me to set up toc style feature ‘#3’,\MessageBreak
617       but I don’t know this feature.\MessageBreak
618       See the tocstyle manual for all known feature.\MessageBreak
619     }%
620   \fi
621 \fi
622 }
623 \newcommand*{\settocfeature}{}
624 \let\settocfeature\@settocfeature

```

`\l@addto@macro` Something like `\g@addto@macro` but only with local effect. While other packages or classes may also define this, `\providecommand` will be used.

```

625 \providecommand{\l@addto@macro}[2]{%
626   \edef#1{\unexpanded\expandafter{#1#2}}%
627 }%

```

`\settocstylefeature` Same as above without TOC argument.

```

\@settocstylefeature 628 \newcommand*{\@settocstylefeature}{%
629   \kernel@ifnextchar[ {\@settocfeature[]} {\@settocfeature[] []}%
630 }

```

```

631 \newcommand*{\settocstylefeature}{}
632 \let\settocstylefeature\@settocstylefeature

```

Different commands will be defined:

`\tocstyle@feature@!<feature!>@@` Global feature (all TOCs all depths).

`\tocstyle@feature@@!<feature!>@!<TOC!>@` All depth feature for one TOC.

`\tocstyle@feature@@!<feature!>@@!<depth!>` All TOCs feature for one depth.

`\tocstyle@feature@!<feature!>@!<TOC!>@!<depth!>` One depth of one TOC feature.

`\tocstyle@activate@features` Activates the features

```

633 \newcommand*{\tocstyle@activate@features}{%
634   \expandafter\ifx\csname tocstyle@depthlist@\tocstyleTOC\endcsname\relax
635     \expandafter\xdef\csname tocstyle@depthlist@\tocstyleTOC\endcsname{%
636       \tocstyledepth}%
637   \else
638     \expandafter\let\expandafter\@tempa
639     \csname tocstyle@depthlist@\tocstyleTOC\endcsname
640     \@expandtwoargs\in@{,\tocstyledepth,}{,\@tempa,}%
641     \ifin@\else
642       \expandafter\xdef\csname tocstyle@depthlist@\tocstyleTOC\endcsname{%
643         \csname tocstyle@depthlist@\tocstyleTOC\endcsname,\tocstyledepth}%
644     \fi
645   \fi
646   \expandafter\@for \expandafter\@tempa
647   \expandafter:\expandafter=\tocstyle@featurelist \do
648   {%
649     \@ifundefined{tocstyle@feature@\@tempa @\tocstyleAliasTOC @\tocstyledepth}{%
650       \@ifundefined{tocstyle@feature@\@tempa @@\tocstyledepth}{%
651         \@ifundefined{tocstyle@feature@\@tempa @\tocstyleAliasTOC @}{%
652           \@ifundefined{tocstyle@feature@\@tempa @@}{%
653             \expandafter\let\csname tocstyle@feature@\@tempa\endcsname\relax
654           }{%
655             \expandafter\let\csname tocstyle@feature@\@tempa
656             \expandafter\endcsname
657             \csname tocstyle@feature@\@tempa @@\endcsname
658           }%
659         }{%
660           \expandafter\let\csname tocstyle@feature@\@tempa
661           \expandafter\endcsname
662           \csname tocstyle@feature@\@tempa @\tocstyleAliasTOC @\endcsname
663         }%
664       }{%
665         \expandafter\let\csname tocstyle@feature@\@tempa
666         \expandafter\endcsname
667         \csname tocstyle@feature@\@tempa @@\tocstyledepth\endcsname
668       }%

```

```

669     }{%
670         \expandafter\let\csname tocstyle@feature@\@tempa
671         \expandafter\endcsname
672         \csname tocstyle@feature@\@tempa @\tocstyleAliasTOC @\tocstyledepth\endcsname
673     }%
674 }%
675 }

```

`\newtocstyle` Defining a new TOC style. First optional argument is a TOC style, that will be activated before the new definitions. Note that all new definitions will overwrite the parent's definitions. So a new TOC style, that defines all features doesn't need a parent.

```

676 \newcommand*{\newtocstyle}{%
677     \kernel@ifnextchar [{\@newtocstyle}{\@newtocstyle[]}]
678 \newcommand*{\@newtocstyle}[1]{%
679 \def\@newtocstyle[#1]{%
680     \kernel@ifnextchar [{\@@newtocstyle[#1]}]{\@newtocstyle[#1] []}]
681 \newcommand*{\@@newtocstyle}[1][2]#3#4{%
682 \def\@@newtocstyle[#1][#2]#3#4{%
683     \@ifundefined{tocstyle@style@#3}{%
684         \@ifundefined{tocstyle@style@#1}{%
685             \ifx \relax#1\relax\else
686                 \PackageError{tocstyle}{unknown parent TOC style '#1'}{%
687                     You've told me to inheritate parent TOC style '#1',\MessageBreak
688                     but there's no TOC style '#1' defined.}%
689             \fi
690             \expandafter\def\csname tocstyle@style@#3\endcsname{#4}%
691         }{%
692             \expandafter\def\csname tocstyle@style@#3\endcsname{%
693                 \edef\reserved@a{%
694                     \noexpand\l@addto@macro\noexpand\tocstyle@feature@excludelist{#2}%
695                     \noexpand\@usetocstyle{#1}%
696                     \noexpand\def\noexpand\tocstyle@feature@excludelist{%
697                         \tocstyle@feature@excludelist}%
698                 }\reserved@a
699                 #4%
700             }%
701         }%
702     }{%
703         \PackageError{tocstyle}{TOC style '#3' already defined}{%
704             You've tried to define a new TOC style '#3',\MessageBreak
705             but there's already a TOC style named '#3'.}%
706     }%
707 }
708 \newcommand*{\tocstyle@feature@excludelist}{}

```

`\usetocstyle` Use the predefined TOC style. You may define `\tocstyle@deprecated@style@foo` to mark TOC style `foo` to be deprecated. If `\tocstyle@deprecated@style@foo` is `\empty` TOC style `deprecated@foo` will be used instead almost silently.

Otherwise TOC style \tocstyle@deprecated@style@foo will be used instead and the user will be told about this change.

```

709 \newcommand*{\usetocstyle}[2][\%
710   \@ifundefined{tocstyle@deprecated@style@#2}{\%
711     \@ifundefined{tocstyle@style@#2}{\%
712       \PackageError{tocstyle}{unknown TOC style ‘#2’}{\%
713         You’ve told me to use TOC style ‘#2’,\MessageBreak
714         but there’s no TOC style ‘#2’ defined.}\%
715     }{\%
716       \def\settocfeature{%
717         \kernel@ifnextchar[ \%
718         {\@@settocfeature[#1]}{\@@settocfeature[#1]}[]}\%
719       }%
720       \let\settocstylefeature\settocfeature

```

Deactivate all known features for this TOC

```

721       \expandafter\ifx\csname tocstyle@commandlist@#1\endcsname\relax
722       \else
723         \expandafter\expandafter\expandafter\@for
724         \expandafter\expandafter\expandafter\@tempa
725         \expandafter\expandafter\expandafter:%
726         \expandafter\expandafter\expandafter=%
727         \csname tocstyle@commandlist@#1\endcsname
728         \do{%
729           \expandafter\let\csname \@tempa\endcsname\relax
730         }%

```

So there are no more known features for this TOC.

```

731       \expandafter\let\csname tocstyle@commandlist@#1\endcsname\relax
732       \fi

```

Activate all known features for this style and TOC

```

733       \@usetocstyle[#2]\%
734       \let\settocfeature\@settocfeature
735       \let\settocstylefeature\@settocstylefeature
736     }%
737   }{\%
738     \expandafter\ifx\csname tocstyle@deprecated@style@#2\endcsname\@empty
739     \PackageWarning{tocstyle}{\%
740       deprecated TOC style ‘#2’!\MessageBreak
741       You should not longer use this style,\MessageBreak
742       because it will be removed soon.\MessageBreak
743       You should select another TOC style}\%
744     \usetocstyle[#1]{deprecated@#2}\%
745   \else
746     \PackageWarning{tocstyle}{\%
747       deprecated TOC style ‘#2’!\MessageBreak
748       You should use TOC style ‘\csname
749       tocstyle@deprecated@style@#2\endcsname’\MessageBreak
750       instead of ‘#2’}\%

```

```

751     \fi
752   }%
753 }
754 \newcommand*{\@usetocstyle}[1]{%
755   \csname tocstyle@style@#1\endcsname
756 }

\tocstyle@featurelist  Comma separated list of all known features
757 \newcommand*{\tocstyle@featurelist}{%
758   pagenumberhook,entryhook,dothook,entryvskip,leaders,raggedhook,%
759   spaceafternumber,parfillskip,pagumberbox,%
760 }

\tocstyle@feature@pagenumberhook
\tocstyle@feature@pagenumberhook 761 \newcommand*{\tocstyle@feature@pagenumberhook}{}
\tocstyle@feature@entryhook       762 \let\tocstyle@feature@pagenumberhook\relax
\tocstyle@feature@dothook         763 \newcommand*{\tocstyle@feature@pagumberbox}{}
\tocstyle@feature@entryvskip      764 \let\tocstyle@feature@pagumberbox\relax
\tocstyle@feature@leaders         765 \newcommand*{\tocstyle@feature@entryhook}{}
\tocstyle@feature@parfillskip     766 \let\tocstyle@feature@entryhook\relax
\tocstyle@feature@raggedhook      767 \newcommand*{\tocstyle@feature@dothook}{}
\tocstyle@feature@spaceafternumber 768 \let\tocstyle@feature@dothook\relax
\tocstyle@feature@spaceafternumber 769 \newcommand*{\tocstyle@feature@entryvskip}{}
\tocstyle@feature@spaceafternumber 770 \let\tocstyle@feature@entryvskip\relax
\tocstyle@feature@spaceafternumber 771 \newcommand*{\tocstyle@feature@leaders}{}
\tocstyle@feature@spaceafternumber 772 \let\tocstyle@feature@leaders\relax
\tocstyle@feature@spaceafternumber 773 \newcommand*{\tocstyle@feature@parfillskip}{}
\tocstyle@feature@spaceafternumber 774 \let\tocstyle@feature@parfillskip\relax
\tocstyle@feature@spaceafternumber 775 \newcommand*{\tocstyle@feature@raggedhook}{}
\tocstyle@feature@spaceafternumber 776 \let\tocstyle@feature@raggedhook\relax
\tocstyle@feature@spaceafternumber 777 \newcommand*{\tocstyle@feature@spaceafternumber}{}
\tocstyle@feature@spaceafternumber 778 \let\tocstyle@feature@spaceafternumber\relax

\iftochasdepth  Uses \tocstyle@depthlist@<TOC> to test, if the TOC has the depth
                 already.
779 \newcommand*{\iftochasdepth}[2]{%
780   \begingroup
781     \expandafter\let\expandafter\@tempa\csname tocstyle@depthlist@#1\endcsname
782     \ifx\@tempa\relax
783       \aftergroup\@secondoftwo
784     \else
785       \@expandtwoargs\in@{,#2,}{,\@tempa}%
786       \expandafter\aftergroup\ifin@
787       \@firstoftwo
788     \else
789       \@secondoftwo
790     \fi
791   \fi
792   \endgroup

```

793 }

9.2.4. Defining Some TOC Styles

`\ext@toc` From version 0.2i the indirect extension for the auxiliary file of the table of contents is used like the KOMA-Script classes do.

```
794 \providecommand*{\ext@toc}{toc}

795 \newtocstyle{standard}{%
796   \settocfeature{dothook}{\normalfont}%
797   \settocfeature[-1]{entryhook}{\bfseries}%
798   \settocfeature[-1]{entryvskip}{2.25em\@plus\p@}%
799   \settocfeature[-1]{leaders}{\hfill}%
800   \settocfeature[0]{entryvskip}{1em\@plus\p@}%
801   \settocfeature[0]{leaders}{\hfill}%
802   \settocfeature[0]{entryhook}{\bfseries}
803   \iftochaschapter\else
804     \settocfeature[1]{entryvskip}{1em\@plus\p@}%
805     \settocfeature[1]{leaders}{\hfill}%
806     \settocfeature[1]{entryhook}{%
807       \ifx\tocstyleAliasTOC\ext@toc\bfseries\fi
808     }%
809   \fi
810 }
811 \begingroup\expandafter\expandafter\expandafter\endgroup
812 \expandafter\ifx\csname KOMAClassName\endcsname\relax
813   \newtocstyle{KOMAlike}{%
814     \settocfeature{dothook}{\normalfont}%
815     \settocfeature[-1]{entryhook}{\sffamily\bfseries}%
816     \settocfeature[-1]{entryvskip}{2.25em\@plus\p@}%
817     \settocfeature[-1]{leaders}{\hfill}%
818     \settocfeature[-1]{pagenumberhook}{\sffamily\bfseries}%
819     \settocfeature[0]{entryvskip}{1em\@plus\p@}%
820     \settocfeature[0]{leaders}{\hfill}%
821     \settocfeature[0]{entryhook}{\sffamily\bfseries}
822     \settocfeature[0]{pagenumberhook}{\sffamily\bfseries}%
823     \iftochaschapter\else
824       \settocfeature[1]{entryvskip}{1em\@plus\p@}%
825       \settocfeature[1]{leaders}{\hfill}%
826       \settocfeature[1]{entryhook}{%
827         \ifx\tocstyleAliasTOC\ext@toc\sffamily\bfseries\fi
828       }%
829       \settocfeature[1]{pagenumberhook}{%
830         \ifx\tocstyleAliasTOC\ext@toc\sffamily\bfseries\fi
831       }%
832     \fi
833   }
834 \else
835   \newtocstyle{KOMAlike}{%
```

```

836 \settocfeature{dothook}{\normalfont}%
837 \settocfeature[-1]{entryhook}{\usekomafont{partentry}}%
838 \settocfeature[-1]{entryvskip}{2.25em\@plus\p@}%
839 \settocfeature[-1]{leaders}{\hfill}%
840 \settocfeature[-1]{pagenumberhook}{\usekomafont{partentrypagenumber}}%
841 \settocfeature[0]{entryvskip}{1em\@plus\p@}%
842 \settocfeature[0]{leaders}{\hfill}%
843 \settocfeature[0]{entryhook}{\usekomafont{chapterentry}}%
844 \settocfeature[0]{pagenumberhook}{\usekomafont{chapterentrypagenumber}}%
845 \iftochaschapter\else
846 \settocfeature[1]{entryvskip}{1em\@plus\p@}%
847 \settocfeature[1]{leaders}{\hfill}%
848 \settocfeature[1]{entryhook}{%
849 \begin{group}
850 \ifx\tocstyleAliasToc\ext@toc
851 \def\@tempa{\endgroup\usekomafont{sectionentry}}%
852 \else
853 \let\@tempa\endgroup
854 \fi
855 \@tempa
856 }%
857 \settocfeature[1]{pagenumberhook}{%
858 \begin{group}
859 \ifx\tocstyleAliasToc\ext@toc
860 \def\@tempa{\endgroup\usekomafont{sectionentrypagenumber}}%
861 \else
862 \let\@tempa\endgroup
863 \fi
864 \@tempa
865 }%
866 \fi
867 }
868 \fi
869 \newcommand*{\tocstyle@deprecated@style@KOMAScript}{KOMAlike}%
870 \newtocstyle[KOMAlike]{classic}{%
871 \settocfeature[-1]{pagenumberhook}{\normalfont\normalcolor}%
872 \settocfeature[0]{pagenumberhook}{\normalfont\normalcolor}%
873 \iftochaschapter\else
874 \settocfeature[1]{pagenumberhook}{\normalfont\normalcolor}%
875 \fi
876 \settocfeature{pagenumberhook}{\normalfont\normalcolor}%
877 \settocfeature{raggedhook}{\raggedright}%
878 }
879 \newtocstyle[classic][leaders]{allwithdot}{%
880 \newtocstyle[allwithdot]{noonewithdot}{%
881 \settocfeature{leaders}{\hfill}%
882 }
883 \newtocstyle[classic][leaders]{nopagecolumn}{%
884 \settocfeature{leaders}{\quad}%

```



```

885 \settocfeature{parfillskip}{\z@ plus 1fil}%
886 \settocfeature{pagenumberbox}{\hbox}%
887 }

```

9.2.5. Defining Some TOC Styles

Loading a optional configuration file.

```

888 \InputIfFileExists{tocstyle.cfg}{%
889 \PackageInfo{tocstyle}{using tocstyle.cfg}%
890 }{%
891 \PackageInfo{tocstyle}{no tocstyle.cfg found}%
892 }

```

A. Examples for the Different TOC Styles

Here you will find the table of contents of this document set in the different TOC styles. All are set with option `tocindentauto`.

A.1. Graduated Versions

First of all all graduated versions of the table of contents

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A.1.2. KOMAlike with Option `tocgraduated`

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A.1.3. classic with Option tocgraduated

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A.1.4. allwithdot with Option tocgraduated

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A.1.5. noonewithdot with Option tocgraduated

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A.1.6. nopagecolumn with Option tocgraduated

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A.2. Flat Versions

Now, all flat versions of the table of contents

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A.2.2. KOMAlike with Option `tocflat`

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A.2.3. classic with Option tocflat

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A.2.4. `allwithdot` with Option `tocflat`

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A.2.5. noonewithdot with Option tocflat

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A.2.6. nopagecolumn with Option tocflat

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A.3. Fullflat Versions

Now, all full-flat versions of the table of contents

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v0.2e	General: usage of new font elements of KOMA-Script at KOMAl like	31
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