1 \TeX\ distributions

1.1 \TeX\ Live

In \TeX\ Live you can install different language collections \texttt{collection-lang<foo>}. For example, the German collection \texttt{collection-langgerman} contains packages \texttt{hyphen-german} and \texttt{dehyph-exptl} which both contain hyphenation patterns (in addition to many other packages related to German language). The Greek collection \texttt{collection-langgreek} contains \texttt{hyphen-greek} and \texttt{hyphen-ancientgreek} among other packages. The package \texttt{dehyph-exptl} is maintained independently, while all packages \texttt{hyphen-<foo>} belong to \texttt{hyph-utf8}.

Hyphenation packages may contain one or more patterns. For example \texttt{hyphen-norwegian} contains two directives for adding two hyphenation patterns:

\begin{verbatim}
execute AddHyphen \  name=bokmal synonyms=norwegian,norsk \  lefthyphenmin=2 \  righthyphenmin=2 \  file=loadhyph-nb.tex \  file_patterns=hyph-nb.pat.txt \  file_exceptions=hyph-nb.hyp.txt
execute AddHyphen \  name=nynorsk \  lefthyphenmin=2 \  righthyphenmin=2 \  file=loadhyph-nn.tex \  file_patterns=hyph-nn.pat.txt \  file_exceptions=hyph-nn.hyp.txt
\end{verbatim}

The keywords \texttt{name} and \texttt{synonyms} are used as language name to access the patterns in \TeX, \texttt{file} is used as pattern loader for 8-bit engines and \XeTeX, while \texttt{file_patterns} and \texttt{file_exceptions} are plain text files used by Lua\TeX. The information from \texttt{AddHyphen} directives end up in three different files: \texttt{language.dat} used by \LaTeX, \texttt{language.def} used by plain \TeX and \texttt{language.dat.lua} used by Lua\TeX.
All the three are placed in 
\$TEXMFSYSVAR/tex/generic/config.
for example in
while a static copy also exists in
\$TEXMFDIST/tex/generic/config.
but that one contains all languages and only makes sense if you have a complete checkout from SVN repository for example.

\%
\text{from hyphen-norwegian:}
\text{bokmal loadhyph-nb.tex}
\text{=norwegian}
\text{nynorsk loadhyph-nn.tex}

\text{Figure 2 language.dat}

\%
\text{from hyphen-norwegian:}
\text{\textbackslash addlanguage\{bokmal\}\{loadhyph-nb.tex\}\{2\}{2}}
\text{\textbackslash addlanguage\{norwegian\}\{loadhyph-nb.tex\}\{2\}{2}}
\text{\textbackslash addlanguage\{norsk\}\{loadhyph-nb.tex\}\{2\}{2}}
\text{\textbackslash addlanguage\{nynorsk\}\{loadhyph-nn.tex\}\{2\}{2}}

\text{Figure 3 language.def}

\text{-- from hyphen-norwegian:}
\text{[['bokmal']] = {}
\text{ loader = 'loadhyph-nb.tex',}
\text{ lefthyphenmin = 2,}
\text{ righthyphenmin = 2,}
\text{ synonyms = { 'norwegian', 'norsk' },}
\text{ patterns = 'hyph-nb.pat.txt',}
\text{ hyphenation = 'hyph-nb.hyp.txt',}
},
\text{[['nynorsk']] = {}
\text{ loader = 'loadhyph-nn.tex',}
\text{ lefthyphenmin = 2,}
\text{ righthyphenmin = 2,}
\text{ synonyms = { },}
\text{ patterns = 'hyph-nn.pat.txt',}
\text{ hyphenation = 'hyph-nn.hyp.txt',}
},

\text{Figure 4 language.dat.lua (the keyword loader is not used anywhere at the moment)}

The files \text{language.dat} and \text{language.def} are used both by 8-bit and native Unicode engines. On one hand this simplifies things, while on the other it makes very little sense to include sanskrit patterns in pd\TeX{} – the package doesn’t load any patterns in that case any way. It might be that there will be multiple copies of \text{language.dat} for different engines in future.
1.2 MiKTeX

In MiKTeX application MiKTeX Options which you can run from Start menu (Maintenance → Settings or Maintenance (Admin) → Settings (Admin)) or from command line (mo.exe or mo_admin.exe) you can select which languages you want to include into \TeX formats.

![Figure 5 user interface to select the desired languages](image)

Based on that selection MiKTeX creates three files language.dat, language.def and language.dat.lua in directory

C:\ProgramData\MiKTeX\2.9\tex\generic\config

The contents of those files are the same as described in \TeX Live section, but the needed information about names of languages and required files comes from

C:\Program Files\MiKTeX 2.9\MiKTeX\config\languages.ini

instead of special hyphen-<foo> packages.

(Exact location might depend on where you install MiKTeX and whether you install it for all users or just for yourself. It may also depend on Windows version. The information above holds for MiKTeX 2.9 on Windows 7 with system-wide installation.)
Figure 6  languages.ini
List of languages in \TeX\ Live 2017:

- collection-langarabic
  - hyphen-arabic
    - arabic
  - hyphen-farsi
    - farsi,persian
- collection-langchinese
  - hyphen-chinese
    - pinyin
- collection-langcyrillic
  - hyphen-belarusian
    - belarusian
  - hyphen-bulgarian
    - bulgarian
  - hyphen-churchslavonic
    - churchslavonic
  - hyphen-mongolian
    - mongolian
    - mongolianlmc
  - hyphen-russian
    - russian
  - hyphen-serbian
    - serbian
    - serbianc
  - hyphen-ukrainian
    - ukrainian
- collection-langczechslovak
  - hyphen-czech
  - czech
  - hyphen-slovak
  - slovak
- collection-langenglish
  - hyphen-english
    - ukenglish,british,UKenglish
    - usenglishmax
- collection-langeuropean
  - hyphen-armenian
  - armenian
  - hyphen-croatian
    - croatian
  - hyphen-danish
    - danish
  - hyphen-dutch
    - dutch
  - hyphen-estonian
    - estonian
  - hyphen-finnish
  - finnish
  - hyphen-friulan
    - friulan
- collection-langfrench
  - hyphen-basque
  - basque
  - hyphen-french
    - french,patois,francais
- collection-langgerman
  - hyphen-german
  - german
  - hyphen-kurmanji
  - kurmanji
  - hyphen-latin
    - classiclatin
    - latin
    - liturgicallatin
  - hyphen-latvian
  - latvian
  - hyphen-lithuanian
  - lithuanian
  - hyphen-norwegian
    - bokmal,norwegian,norsk
    - nynorsk
  - hyphen-occitan
    - occitan
  - hyphen-piedmontese
    - piedmontese
  - hyphen-romanian
    - romanian
  - hyphen-romansh
    - romansh
  - hyphen-slovak
    - slovenian,slovene
  - hyphen-swedish
    - swedish
  - hyphen-turkish
    - turkish
  - hyphen-uppernorwegian
    - uppernorwegian
  - hyphen-welsh
    - welsh
- collection-langfrench
  - hyphen-basque
    - basque
  - hyphen-french
    - french,patois,francais
- collection-langgerman
  - hyphen-german
    - german
  - hyphen-kurmanji
    - kurmanji
  - hyphen-latin
    - classiclatin
    - latin
    - liturgicallatin
  - hyphen-latvian
    - latvian
  - hyphen-lithuanian
    - lithuanian
  - hyphen-norwegian
    - bokmal,norwegian,norsk
    - nynorsk
  - hyphen-occitan
    - occitan
  - hyphen-piedmontese
    - piedmontese
  - hyphen-romanian
    - romanian
  - hyphen-romansh
    - romansh
  - hyphen-slovak
    - slovenian,slovene
  - hyphen-swedish
    - swedish
  - hyphen-turkish
    - turkish
  - hyphen-uppernorwegian
    - uppernorwegian
  - hyphen-welsh
    - welsh