How to further enhance XKB configuration

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Abstract

!

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?
% ?
& '(%) ! >
* + , >
- ! . * M
/ ! '(% 0 0 M
(=
1 T
- 2 ! 1 "A

Overview

! 5 ! '(
&5 6/ 0 ! 7 688 5 8 8'(%8'(% ! 9
! ! ! 5 !
5 ! + '
5

+ ! : / 5 5 ! 7 688 8
; 8 85 9 ! !

.
'2 <= > ? """1= @ A

The Basics

+ ' 5
5 ! ! !

! !

man xkbcomp :

5 ! ! ! ! B !
B '

+ B 5 ! ! ! 6

(! !
B 5 B B
! *&-
! ! ! !
!
! ! 6

C 5 D0/)&E
!

C 5 B ! 5
D+&A"E 5 0 B
D+&A4EB D+&A?E

!
0 ! B) B + B !
!

)) ! ! !

5 !
*&- !

0 2 "< B : !
F
B !
! !

, , ! 5 !
5

+ ! 5 !
/usr/lib/X11/xkb

Enhancing XKB Configuration

$! 5 ! !
: B ! !
B G ! ! 5

H I , B ! ! 6

C ! !

C

C !

2 ! B 5 5 !
G ! & !

Levels And Groups

0 '2 <= > ? A """1= @ A ! 5
! ! 5 B
: 5
! !

1
!! ! ' !
#! B ' B
' B $!B J B , '

K ! ' !
! ! 5
.
!! ! !! ! ! D&. &1E B
! B !
!

. '(%
% ! (

' '(% ! ! 5 : !
'(% K ! !
! ! !!
! !! H ! I !
!! !
! % B

!! '(% ! !!
! '
!

6

C ! '(% !
!!

C ! ! '(% !
! 0 ! B) B + B !

C !! !! !

C !! ! !! ! !

C '

: ! ! B !
! !!
!

! 5
! ! !
! ! 6

C ! !

C ! ! 5

Defining New Layouts

0 0 H + '(% 7 688 8; 8 85 8
9 ! 5 ! 5 '(%
5

0) '(% ! ! 7 688 8;
8 85 8 9 ! 5 ! 5 ! 5
! !

Predefined XKB Symbol Sets

:! ! & 5 B
! ! !

B 5 5
! * (5 ! pc/gb 6

```
partial default alphanumeric_keys
xkb_symbols "basic" {
  include "pc/latin"

  name[Group1]="Great Britain";
```

```
  key <AE02>  { [         2,   quotedbl,  twosuperior,    oneeighth ] };
  key <AE03>  { [         3,   sterling, threesuperior,    sterling ] };
  key <AC11>  { [apostrophe,         at, dead_circumflex, dead_caron] };
  key <TLDE>  { [     grave,    notsign,          bar,          bar ] };
  key <BKSL>  { [numbersign, asciitilde,   dead_grave,   dead_breve ] };
  key <RALT>  { type[Group1]="TWO_LEVEL",
                [ ISO_Level3_Shift, Multi_key ]   };

  modifier_map Mod5   { <RALT> };
};
```

: ! basic 5 !
L, % L
! ! ! ! + !
! ! D+&A4EB D+&A?EB D+)""EB D *-&E D%(0*E
!! ! ! ! ! D1+*E

. D1+*E ! ! $ M
! ! ! * B 0 ! :

B ! ! basic
8 8 !

Key Types

!! ! ! !!
! ! $
Npc/latinO! NFOUR_LEVEL_ALPHABETICO
5 D1+*E 5 NTWO_LEVELO

+ ! ! !
! ! default 5

6

#.&P*&Q&* !
! !

H#P*&Q&* ! 0 !
0 ! !
:! * !)
! !
:! 0 ! R* ! !

!!

+*/3+%& :) ! 0 ! * :
0 !
! H * ! B !
! !
! :! 0 ! R*

! ! !
! !

31&&P*&Q&* : H#P*&Q&* 5
! *
! :! 0 ! R*
! !
+ H#P*&Q&*B * ! !
# 0 ! *
:! * !

2# 1P*&Q&* : 31&&P*&Q&* *&Q&*P 31&&
! 0 ! R* !
! !

2# 1P*&Q&*P+*/3+%& :) : 2# 1P*&Q&* ! !
+*/3+%& :) :! * R*
!
:! * R0 !
R* !

(&K/+- + !
!
0 ! . * :! ! !
! ! :! 0 ! .
* ! !
:! 0 ! R. * !
! ! + B !

2# 1P*&Q&*P(&K/+- : (&K/+- *
! :! * !
! :! 0 ! R*
. * R* ! !
:! 0 ! R. * R*
! !
B !

% B ! 6

/)P%1&+(: H#P*&Q&*)
! 0 ! B !
) 0 !

/)P0K01J : H#P*&Q&* + !
0 ! B !
+ 0 !

) 1* ! +) :
R+* :! ! +) ! !
! + R) !
!

03:2 ! 0 ! + :
R+* :! ! + 0 ! ! !
! + R0 ! ! !

:! B caps !
! *ALPHABETIC ! !
/
! 6

C

C P

C !

C !P

. ! ! ! 'caps:'
5

- ! 5 :! !!

More On Definitions Of Types

H '(% !
! ! ! 'modifiers=<list of mod-
ifiers>' 5 ! 'map[<combination of modifiers>]=<list
of modifiers>' ! !
! $! 5 .#
! :!
! !
S

* 5 ! $ # $ 6

```
type "..." {
    modifiers = ModOne+ModTwo;
    map[None] = Level1;
    map[ModOne] = Level2;
};
```

: ! $ $ # R$
: ! $! 5
! * "

% 6

```
type "..." {
    modifiers = ModOne;
    map[None] = Level1;
    map[ModOne] = Level2;
```

```
};
```

```
  $
$ #           B $           *  "
   $ # R$         *  4      $ #

H        !       !     *  I :         !
  *    !          !  !               !

          !    !      %
                         !    !
      !    !       !

   B    !                      'modifiers=<list of modifiers>'
!  !                0              :!
       !  !  !                      B
          preserve[<combination of modifiers>]=<list of modifiers>'
  B !                 !           :!   *
  !
                   !    !

+                          !   0
 !                         5
Q     !
          !   6
```

```
virtual_modifiers <comma-separated list of modifiers>  ;
```

```
     !  5            basicBpc   mousekeys     !
```

Rules

```
#     !                        !
!           !        B   B    B
                          5   !

         !     !
         !5       !  !
      !        !         !

+        !  !                      /usr/lib/X11/xkb/rules
     !        6                ModelBLayoutBVariant    Options 2
                model     layout      !!   !      !


    !    !      !
         5                        !             5
  !          +      !        6


! model                   = keycodes
  macintosh_old                  = macintosh
  ...
```

```
  *                  = xorg

! model                  = symbols
  hp                  = +inet(%m)
  microsoftpro                 = +inet(%m)
  geniuscomfy                 = +inet(%m)

! model     layout[1]         = symbols
  macintosh us         = macintosh/us%(v[1])
  *             *               =       pc/pc(%m)+pc/%l[1]%(v[1])

! model     layout[2]         = symbols
  macintosh     us              = +macintosh/us[2]%(v[2]):2
  *  *               = +pc/%l[2]%(v[2]):2

! option   = types
  caps:internal   = +caps(internal)
  caps:internal_nocancel = +caps(internal_nocancel)


&     !             !       !   ! S
 =       2  5                             macintosh_old     5
   !    !    ! !                keycodes/macintosh       !
                         *             ! !               keycodes/xorg
                      !         !
  !
           B                    !


+
                      %    !             !
 5              !      !    2  5                                +%l%(v)
 5          +cz(bksl) !              !                        cz
   bksl    $  B !                !        !
          [ B ]        5
             :!             !        !

0         !           !    !
        5     !     B     B    #        !
    0    B                  !    B
          !          !
     !             !                                  us    !    macintosh
                          !
```

Descriptive Files of Rules

```
.   G                                        <rules>.xml      !
          5          !       !
```

Old Descriptive Files

```
  !          !                              <rules>.lst :
     S    !                          B !
```

5 !
!
B '$* ! !

2 ! ! 2 !
.lst ! 6

```
! model
  pc104  Generic 104-key PC
  microsoft Microsoft Natural
  pc98  PC-98xx Series
  macintosh     Original Macintosh
  ...

! layout
  us  U.S. English
  cz  Czech
  de  German
  ...

! option
  caps:internal   uses internal capitalization. Shift cancels Caps
  caps:internal_nocancel uses internal capitalization. Shift doesn't cancel Caps
```

+ & G 5