
Subject: K_CTRL_SEMICOLON and K_CTRL_PERIOD keys share the same constant value on Win32

Posted by [Oblivion](#) on Fri, 04 Dec 2020 19:32:18 GMT

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Hi,

As the title explains, the Ctrl+semicolon and Ctrl+Period keys share the same constant value and this results in error in Win32 if they are both used in the same switch statement.

See, Win32Keys.h, ln: 118, 119:

```
K_CTRL_PERIOD = K_CTRL|0xbe|K_DELTA,  
K_CTRL_SEMICOLON = K_CTRL|0xbe|K_DELTA,
```

Best regards,
Oblivion

Subject: Re: K_CTRL_SEMICOLON and K_CTRL_PERIOD keys share the same constant value on Win32

Posted by [mirek](#) on Fri, 11 Dec 2020 15:14:00 GMT

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Thanks, fixed.

Subject: Re: K_CTRL_SEMICOLON and K_CTRL_PERIOD keys share the same constant value on Win32

Posted by [Oblivion](#) on Mon, 14 Dec 2020 19:47:20 GMT

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Hello Mirek,

There seems to be another problem with function key handling, specifically on X11:

In X11Proc.cpp, Key release the "keysym" variable (which is unsigned long) is either uninitialized or can return values > 64K. This messes the upper word of K_keys where the keyflags reside and basically renders the modified function keys ([SHIFT]CTRL/ALT+FN) unusable on X11.

For example, CTRL + F5:

```
K_CTRL_F5|K_KEYUP = 0x13ffc2  
actual key      = 0xffffffffc2
```

This seems to be a quick work-around, but unfortunately, I have little time now to investigate its possible side-effects (I believe, we don't use the upper word of keysym at this point):

CtrlCore/X11Proc.cpp:270

```
keysym &= 0xFFFF; <---- ADDED
if(keysym >= '0' && keysym <= '9' && (chr == 0 || GetCtrl() || GetAlt())) {
    DispatchKey(KEYtoK(keysym - '0' + K_0)|up, count);
    return;
}
if(chr >= 1 && chr < 32) {
    DispatchKey(KEYtoK(chr - 1 + K_CTRL_A)|up, count);
    return;
}
if(keysym >= 0xff80 && keysym <= 0ffb9 && chr) {
    DispatchKey(KEYtoK(chr)|up, count);
    return;
}
if(keysym >= 0xff00 && chr < 128 ||
   (GetCtrl() || GetAlt()) && keysym >= 0x20 && keysym < 0x7f) {
    if(keysym >= 'a' && keysym <= 'z')
        keysym = keysym - 'a' + 'A';
    DispatchKey(KEYtoK(keysym|K_DELTA)|up, count);
    return;
}
```

Best regards,
Oblivion

Subject: Re: K_CTRL_SEMICOLON and K_CTRL_PERIOD keys share the same constant value on Win32

Posted by [Oblivion](#) on Mon, 14 Dec 2020 21:48:28 GMT

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Below code seems to allow numpad, editpad, cursor keys with modifiers on X11:

```
static struct { KeySym keysym; dword key; } tab[] = {
{ XK_ISO_Left_Tab, K_TAB|K_SHIFT },
{ XK_Backspace, K_BACKSPACE },
{ XK_Tab, K_TAB },
```

```

{ XK_Return,      K_ENTER      },
{ XK_KP_Enter,    K_ENTER      },
{ XK_Escape,      K_ESCAPE      },
{ XK_space,       K_SPACE      },
{ XK_Pause,       K_BREAK      },
{ XK_Scroll_Lock, K_SCROLL      },
{ XK_Home,        K_HOME      },
{ XK_End,         K_END      },
{ XK_Left,        K_LEFT      },
{ XK_Up,          K_UP      },
{ XK_Right,       K_RIGHT      },
{ XK_Down,        K_DOWN      },
{ XK_Prior,       K_PRIOR      },
{ XK_Next,        K_NEXT      },
{ XK_Page_Up,     K_PAGEUP      },
{ XK_Page_Down,   K_PAGEDOWN      },
{ XK_Insert,      K_INSERT      },
{ XK_KP_Space,    K_SPACE      },
{ XK_KP_Tab,      K_TAB      },
{ XK_KP_Enter,    K_ENTER      },
{ XK_KP_F1,       K_F1      },
{ XK_KP_F2,       K_F2      },
{ XK_KP_F3,       K_F3      },
{ XK_KP_F4,       K_F4      },
{ XK_KP_Home,     K_HOME      },
{ XK_KP_Left,     K_LEFT      },
{ XK_KP_Up,       K_UP      },
{ XK_KP_Right,    K_RIGHT      },
{ XK_KP_Down,     K_DOWN      },
{ XK_KP_Page_Up,  K_PAGEUP      },
{ XK_KP_Page_Down, K_PAGEDOWN      },
{ XK_KP_End,      K_END      },
{ XK_KP_Begin,    K_HOME      },
{ XK_KP_Insert,   K_INSERT      },
{ XK_KP_Delete,   K_DELETE      },
{ XK_KP_Multiply, K_MULTIPLY      },
{ XK_KP_Add,      K_ADD      },
{ XK_KP_Separator, K_SEPARATOR      },
{ XK_KP_Subtract, K_SUBTRACT      },
{ XK_KP.Decimal,  K_DECIMAL      },
{ XK_KP_Divide,   K_DIVIDE      },
};

for(int i = 0; i < __countof(tab); i++)
if(tab[i].keysym == keysym) {
    DispatchKey(KEYtoK(tab[i].key)|up, count);
    return;
}
if(GetShift() && chr == 0) {

```

```

static dword k[] = { 41, 33, 64, 35, 36, 37, 94, 38, 42, 40 };
for(int i = 0; i < 10; i++)
    if(keysym == k[i]) {
        DispatchKey(KEYtoK(i + K_0)|up, count);
        return;
    }
}
#endif PLATFORM OSX11
if(GetCtrl() || GetAlt()) { // fix Ctrl+Shift+1 etc...
    keysym = decode((int)event->xkey.keycode, 0xa, '1', 0xb, '2', 0xc, '3', 0xd, '4',
                    0xe, '5', 0xf, '6', 0x10, '7', 0x11, '8', 0x12, '9', 0x13, '0',
                    keysym);
}
#endif
// DLOG("keysym: " << keysym << " " << (char)keysym);
keysym &= 0xFFFF;
if(keysym >= '0' && keysym <= '9' && (chr == 0 || GetCtrl() || GetAlt())) {
    DispatchKey(KEYtoK(keysym - '0' + K_0)|up, count);
    return;
}
if(chr >= 1 && chr < 32) {
    DispatchKey(KEYtoK(chr - 1 + K_CTRL_A)|up, count);
    return;
}
if(keysym >= 0xff80 && keysym <= 0ffb9 && chr) {
    DispatchKey(KEYtoK(chr)|up, count);
    return;
}
if(keysym >= 0xff00 && chr < 128 ||
   (GetCtrl() || GetAlt()) && keysym >= 0x20 && keysym < 0x7f) {
    if(keysym >= 'a' && keysym <= 'z')
        keysym = keysym - 'a' + 'A';
    DispatchKey(KEYtoK(keysym|K_DELTA)|up, count);
    return;
}

if((chr == 32 || chr == 9 || chr == 13) && !pressed)
    DispatchKey(chr|K_KEYUP, count);
if(chr && pressed) {
    DispatchKey(chr, count);
    for(int ii = 1; ii < wtext.GetLength(); ii++)
        DispatchKey(wtext[ii], count);
}
break;

```

Best regards,
Oblivion

Subject: Re: K_CTRL_SEMICOLON and K_CTRL_PERIOD keys share the same constant value on Win32

Posted by [mirek](#) on Fri, 18 Dec 2020 14:29:11 GMT

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Thanks for investigating this. Do you think it would be possible to post here a complete set of changed files to fix X11?

Mirek

Subject: Re: K_CTRL_SEMICOLON and K_CTRL_PERIOD keys share the same constant value on Win32

Posted by [Oblivion](#) on Fri, 18 Dec 2020 17:12:23 GMT

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Hi,

I've attached the patch.

After further investigating, the problem turned out to be simpler to solve. The culprit seems to be decode().

When keysym is returned as default, it is truncated and the higher bytes were invalidated (filled with 0xff).

Changing this:

```
keysym = decode((int)event->xkey.keycode, 0xa, '1', 0xb, '2', 0xc, '3', 0xd, '4',
                 0xe, '5', 0xf, '6', 0x10, '7', 0x11, '8', 0x12, '9', 0x13, '0',
                 keysym);
```

to this, solved the problem:

```
keysym = decode((int)event->xkey.keycode,
                 0x0a, 0x31,
                 0x0b, 0x32,
```

```
0x0c, 0x33,  
0x0d, 0x34,  
0x0e, 0x35,  
0x0f, 0x36,  
0x10, 0x37,  
0x11, 0x38,  
0x12, 0x39,  
0x13, 0x30, keysym);
```

Best regards,
Oblivion

File Attachments

1) [X11Proc.cpp.patch](#), downloaded 209 times

Subject: Re: K_CTRL_SEMICOLON and K_CTRL_PERIOD keys share the same constant value on Win32

Posted by [mirek](#) on Tue, 22 Dec 2020 14:47:06 GMT

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Thank you, patch applied.

Subject: Re: K_CTRL_SEMICOLON and K_CTRL_PERIOD keys share the same constant value on Win32

Posted by [Oblivion](#) on Sun, 31 Jan 2021 11:07:07 GMT

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Hello Mirek,

I have further investigated the key handling on X!!, and found that numpad virtual keycodes are not propagated properly:

Here is the current situation:

- When Numlock is ON, the characters corresponding to the numpad keys (0-9, +/-, .) are dispatched. This is fine, nothing wrong here.
- However, when the same keys are pressed with CTRL or ALT modifier, they SHOULD send numpad keycodes, e.g, K_NUMPAD0-K_NUMPAD_9, and operators (K_ADD, K_SUBTRACT, etc.). This is the default behaviour of Upp on Windows and GTK (I don't have a Mac)

- But this is not happening on X11. Character codes are dispatched regardless of modifiers

So, I made a patch to remedy this problem. The patch, I believe, is at least a fix for some regression, if not an overall improvement in X11 key handling code.

Please review.

Best regards,
Oblivion

File Attachments

1) [CtrlCore.patch](#), downloaded 190 times

Subject: Re: K_CTRL_SEMICOLON and K_CTRL_PERIOD keys share the same constant value on Win32

Posted by [mirek](#) on Sun, 07 Feb 2021 09:25:44 GMT

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Thanks, applied.

Mirek
