

Re: USB host controller and client driver

Source:

<http://www.tech-archive.net/Archive/WindowsCE/microsoft.public.windowsce.platbuilder/2007-01/msg01010.html>

- *From:* "Henrik Viklund" <henrik.viklund@xxxxxxxxxx>
 - *Date:* 24 Jan 2007 04:39:05 -0800
-

Doh! The last line should read:

The "client" (also called "class") is the layer that adds the functionality to the USB "function" and the "host" respectively, i.e RNDIS or MSD.

Henrik Viklund
<http://www.addlogic.se>

On Jan 24, 1:35 pm, "Henrik Viklund" <henrik.vikl...@xxxxxxxxxx> wrote:

On Jan 24, 1:07 pm, "Henrik Viklund" <henrik.vikl...@xxxxxxxxxx> wrote:

On Jan 24, 11:34 am, "aman" <amitjob...@xxxxxxxxxx> wrote:

What I have understood USB function drivers from your reply:-
"The USB function controller drivers come into picture only if your WinCE ported processor (PXA27X) is to act as a client.

Correct.Um, I take that back, or rather, I realise we need to sort out some definitions! With USB there's a certain amount of confusion when it comes what one mean with "client". To avoid confusion I (and CE help for the most part...) like to call the host "host", and the device that connects to a host is called function (*not* client). The "client" (also called "class") is the layer that adds the functionality to the USB "function", i.e RNDIS or MSD.

Henrik Viklund<http://www.addlogic.se>

so the driver will load during boot time but since the USB

Re: USB host controller and client driver

protocol is
host centric , all the communications will be initiated by host
so
"function controller client drivers" in client(WinCE ported
processor
(PXA27X))doesnt make sense – although I am not sure
about it. "Function
controller client drivers" should be in host only I suppose

Kindly vaktidate the above statement if I am correct.Um,
No? There is no such thing as a "function controller client

driver", at least not in CE. There's the "function controller driver"
and there's the "function client driver" (sometimes refered to as the
function class driver). The same goes for CE's USB host –"host
controller driver" and "host client driver".

controller driver – abstracts hardware
client driver – adds useful functionality (MSD, RNDIS, HID etc.).

Also would appreciate if youu could make me available
USB-OTG code for
Intel PXA27X processor for WinCE 5.0.
Please tell me about it since I have just started of with USB
OTG
device driver development.AFAIK there is no OTG
available. USB OTG is not supported by CE5 or

earlier so you're pretty much on your own I guess.

Henrik Viklund<http://www.addlogic.se>

Thanks & Regards

Aman

Re: USB host controller and client driver

On Jan 24, 2:46 pm, "Henrik Viklund"
<henrik.vikl...@xxxxxxxxxx> wrote:

On Jan 24, 9:53 am, "aman"
<amitjob...@xxxxxxxxxx> wrote:

What I can assume that you are referring to client driver – that in mine case will be a dll named – usbmsfn.dll which will actually be available by building code corresping to client driver. So then how can you diferentiate b/w Client driver and function drivers. There are host client drivers and there are function client drivers:

If we start with USB host. The USB host controller driver is responsible for handling and abstracting the USB host controller hardware into a well defined generic interface (in your case OHCI compliant hardware controller). The host controller driver is loaded at startup and is set up to detect any activity from the USB host controller. When you plug in a usb device into the host connector the host controller driver detects that something has been plugged in and start to enumerate the device (figure out what device was plugged in). Once it has figured that out it checks the registry for a suitable *host* client driver and loads it. the client driver uses the host controller driver's generic interface to communicate with the device.

Re: USB host controller and client driver

In the case of USB function, the function controller driver is responsible for handling and abstracting the USB function controller hardware into a well defined generic interface. The USB function controller driver loads at startup and also immediately load a *function* client driver so that when plugged into a host it can respond to the host's enumeration requests through the generic interface exposed by the function controller driver.

Henrik Viklund <http://www.addlogic.se>

Also I would be grateful if you can validate my other statements :-

1. Always, during the boot time the USB host controller driver DLL – ohci2.dll gets loaded. It is taken care by device manager.

2. This means that although my ohci2.dll gets loaded during boot time but it starts its job only after device is attached . During this time

, control is given by device manager to HcdPdd_Init inbul_ohci.cpp

(C:\WINCE500\PUBLIC\COMMON\OAK\CSP\ARM\INTEL\PXA27X\HCI then initializes the OHCI card within host controller and then configures the device.

Re: USB host controller and client driver

Now I am not sure what exactly configuration check takes place ??
Whether its device id , vendor id only or subinterface class also ??

3. Then once this configuration check is over , Device ?Manager actually loads the correponding client driver – ie maybe usbmsfn.dll by

means of ActivateDeviceex().

Thanks & Regards

Aman

On Jan 24, 12:36 pm,
"Henrik Viklund"
<henrik.vikl...@xxxxxxxxxx>
wrote:

On Jan 24,
5:47 am,
"aman"
<amitjob...@xxxxxxxxxx>
wrote:

What
is
the

Re: USB host controller and client driver

role
of
function
drivers
??
Are
client
drivers
and
host
drivers
enough
to
handle
all
situations
??As
you
might
know
the
USB
protocol
is
asymmetric
-on
one
side
you
have

the USB
host and to
that you
connect
USB
functions
(in your
case the
USB
function is
the USB
mass
storage
device, and
the host is
your
WinCE
device).

Re: USB host controller and client driver

Now, due to the asymmetry of the protocol (the host polls the functions), if you want your device to be the USB function (think PDA connecting to PC) you'd use the USB function drivers and special usb function hardware rather than USB host drivers and hardware.

Henrik
Viklund <http://www.addlogic.se>

Thanks
&
Regards

Amit–
Hide
quoted
text
--
Show
quoted
text
--
Hide
quoted

Re: USB host controller and client driver

text

--

Show

quoted

text

--

Hide

quoted

text

--

Show

quoted

text

--

Hide

quoted

text

--

Show

quoted

text

--

Hide

quoted

text

--

Show

quoted

text

--

Hide

quoted

text

--

Show

quoted

text

--