USING "WiDi" TO WIRELESSLY CONNECT YOUR COMPUTER TO A TV OR A MONITOR

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Web location for this presentation:
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SUMMARY

"WiDi" is a robust technology that can wirelessly connect your "Windows.." computer to a TV or a monitor. "WiDi" is also known as "Intel Wireless Display".
TOPICS

- "WiDi" Fundamentals
- Using "WiDi"
- Obtaining a Computer That Supports "WiDi"
- Installing a "WiDi" Receiver For a TV or a Monitor
"WiDi" FUNDAMENTALS

• "WiDi" stands for "Intel Wireless Display"

• You can use "WiDi" to wirelessly connect a "Windows.." computer directly to a monitor or a TV set. This wirelessly-connected monitor or TV becomes an additional monitor for your computer.
"WiDi" FUNDAMENTALS (continued)

- At the computer end, video and sound is transmitted by a WiDi-capable WiFi wireless networking adapter.
- At the TV or monitor end, either you need to add a "WiDi Receiver" or your "smart tv" may already have one in it.
"WiDi" FUNDAMENTALS (continued)

- If your Intel "Windows.." computer only has one monitor attached to it, "WiDi" cannot be used to connect this single monitor to your computer.
"WiDi" FUNDAMENTALS (continued)

- At the computer end, you usually have to buy the computer with "WiDi" already designed into the computer: At the computer end, you usually cannot add in "WiDi" capability if this capability was not part of the computer when you purchased it.
"WiDi" FUNDAMENTALS (continued)

• Warning: "WiDi" and other wireless technologies all have too much latency and unpredictability for serious gaming.
(You must use wired HDMI or DVI cables for serious gaming.)
WiDi-capable Computer

Wireless WiFi radio signals

TV or Monitor

WiDi / Miracast receiver
"WiDi" FUNDAMENTALS (continued)

At the computer end, your computer needs to have all of the following:

- Intel WiDi-capable Intel processor
- Intel WiDi-capable Intel display adapter
- Intel WiDi-capable Intel WiFi network adapter
- "Windows 7" or "Windows 8" or "Windows 8.1" or "Windows 10"
"WiDi" FUNDAMENTALS (continued)

• At the computer end:
Computer with Intel WiDi-capable processor, Intel WiDi-capable display adapter, Intel WiDi-capable WiFi adapter, and Windows 7, 8, 8.1, or 10.

2.4 GHz or 5 GHz wireless WiFi signal goes to WiDi Receiver at TV or monitor.
"WiDi" FUNDAMENTALS (continued)

- For detailed software and hardware requirements at the computer end, see http://supportkb.intel.com/wireless/wireless-display/templates/selfservice/intellwidi/#portal/1026/article/16168
"WiDi" DETAILS

"WiDi" displays the entire monitor screen at the remote TV or monitor: Your computer "sees" the "WiDi"-connected TV or your (second) monitor as an extra monitor.
At the TV or monitor end, the WiDi receiver has a wireless router inside of it. The virtual wireless router provides a real wireless access point with a real SSID for the WiFi wireless networking adapter at the computer end to communicate with.
"WiDi" DETAILS (continued)

- "SSID"
  = "Service Set Identifier"
  which is broadcast by a "Wireless Access Point"
  of a "wireless router"
"WiDi" FUNDAMENTALS (continued)

- At the TV or monitor end, the WiDi receiver attaches to the TV or monitor by means of HDMI:
2.4 GHz or 5 GHz wireless WiFi signal from Windows.. computer

WiDi receiver

HDMI cable

HDMI Jack

TV or Monitor
"WiDi" FUNDAMENTALS (continued)

• Or, if your TV or monitor only has a DVI jack, you can use an HDMI-to-DVI adapter or adapter cable to connect the WiDi receiver to the TV or monitor:
2.4 GHz or 5 GHz WiFi signal from Windows computer

No audio is transmitted from the PC to the TV or Monitor
"WiDi" DETAILS (continued)

* "WiDi" displays the entire monitor screen: Your computer "sees" the "WiDi"-connected TV or "WiDi"-connected monitor as an extra monitor.
"WiDi" DETAILS (continued)

- "WiDi" is also known as "Intel Wireless Display"

In some specifications for computers or TVs, it is simply called "Wireless Display".
"WiDi" DETAILS (continued)

- If both your computer AND your TV are both "WiDi" capable, all you have to do is to activate "WiDi" in the TV (using the TV remote) and then configure a WiDi-based (additional) monitor from inside the computer:
WiDi-capable computer with Intel processor chip set that has "WiDi" capability

TV or Flatscreen Monitor with WiDi/Miracast Receiver that is part of the TV set
"WiDi" DETAILS (continued)

- If your computer is "WiDi" capable but your TV is not "Widi" capable, lots of "WiDi" receivers are available for your TV including ones made by "Actiontec", "Microsoft", and "Netgear":

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WiDi-capable computer with Intel processor chip set that has "WiDi" capability

TV or Flatscreen Monitor with XYZ Company's "WiDi" receiver
WiDi-capable computer with Intel processor chip set that has "WiDi" capability

TV or Flatscreen Monitor with Microsoft "Wireless Display Adapter"
WiDi-capable computer with Intel processor chip set that has "WiDi" capability

TV or Flatscreen Monitor with Netgear "Push2TV"
WiDi-capable computer with Intel processor chip set that has "WiDi" capability

TV or Flatscreen Monitor with Actiontec "ScreenBeam" Receiver
"WiDi" DETAILS (continued)

- At the TV end, "WiDi" requires either a WiDi-capable television or a WiDi receiver device. The WiDi receiver device requires a HDMI port or a DVI port in the television or monitor.
"WiDi" DETAILS (continued)

• A WiDi receiver works best when you connect it to one of the HDMI ports of a TV: When you do so, both video and audio is transmitted from the computer to the TV.
"WiDi" DETAILS (continued)

• A WiDi receiver also works when you use an HDMI-to-
"DVI" adapter cable to connect it to an DVI port on a
TV or a flatscreen monitor. However, only video is
transmitted and no audio is transmitted.
"WiDi" DETAILS (continued)

• Most of the flatscreen monitors that have been sold for the past 6 years have one or more HDMI ports which you can connect to a WiDi receiver.
When you connect a WiDi receiver to the HDMI port of a flatscreen monitor, you can usually get audio from an audio jack on the monitor:
"WiDi" DETAILS (continued)

- "WiDi" is point to point. It does not require an existing "Wireless Access Point". "WiDi" works even if your local network has "wireless isolation" (= "AP isolation" = "Access Point isolation").
"WiDi" DETAILS (continued)

- "WiDi" displays the mouse cursor at the remote TV or monitor.
"WiDi" DETAILS (continued)

- If your laptop or desktop computer has an "Intel" processor and the computer is "WiDi Ready", you will find "WiDi" or "Intel Wireless Display" or "Wireless Display" in it's specifications.
Intel® Wireless Display-capable
Wirelessly stream entertainment from your laptop to your HDTV* — photos, music, Web videos, Internet TV — whether on the hard drive or online.
"WiDi" DETAILS (continued)

• To determine if your laptop or desktop computer is "WiDi Ready", download and run the "Intel WiDi Update Tool" at http://support.intel.com/wireless/wireless-display/templates/selfservice/intelwidi/#portal/1026/article/16168
"WiDi" DETAILS (continued)

• At the monitor or television end, you either need to have a "WiDi capable" television or a "WiDi" HDMI receiver dongle
"WiDi" DETAILS (continued)

• "WiDi" works even if you do not have an active "WiFi" "wireless access point" in your local network, since "WiDi" is point-to-point.
"WiDi" DETAILS (continued)

- Processor graphics render a second virtual display (adapter), which is broadcast via WiFi through a feature in Intel Centrino wireless chipsets called My WiFi (which creates a "Microsoft Wi-Fi Direct Virtual Adapter")
"WiDi" DETAILS (continued)

- The "Microsoft Wi-Fi Direct Virtual Adapter" provides a Wireless Access Point with a unique SSID that the WiDi receiver at the TV or monitor connects to:
DIRECT-YBWINLAPTOP4657

Public network
Control Panel Home

Change adapter settings

Change advanced sharing settings
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<td>Description</td>
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<tr>
<td>IPv4 WINS Server</td>
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<tr>
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<td>255.255.255.0</td>
</tr>
</tbody>
</table>
Local Area Connection* 5 Properties

Networking

Connect using:

- Microsoft Wi-Fi Direct Virtual Adapter #4

Configure...

This connection uses the following items:

- Client for Microsoft Networks
- VMware Bridge Protocol
- File and Printer Sharing for Microsoft Networks
- QoS Packet Scheduler
- Microsoft Network Adapter Multiplexor Protocol
- Microsoft LLDP Protocol Driver
- Link-Layer Topology Discovery Mapper I/O Driver

Install... Uninstall Properties

Description

Allows your computer to access resources on a Microsoft network.

OK Cancel
Device Information
- Manufacturer: Microsoft
- Model: TMS
- Model number: 1
- Categories: Television
- Description: Unavailable

Device Tasks
To view tasks for this device, right-click the icon for the device in Devices and Printers.
WiDi Transmitter At The Computer End

Virtual Display Adapter → "My WiFi" Virtual Wireless Adapter

Wireless WiFi signal to the TV or monitor
"WiDi" DETAILS (continued)

- On the TV side, a receiver converts the signal and passes it to the TV. The receiver is available as an add-on adapter and a growing number of multifunction TVs, Blu-ray players and set-top boxes are coming to market with WiDi receiver adapters built in.
"WiDi" DETAILS (continued)

- If you hibernate a Windows computer that is connected to a television by means of WiDi, and they you turn the computer back on, you have to re-start the WiDi connection to get back any Windows.. that you "extended" into the WiDi-connected television
"WiDi" DETAILS (continued)

• Since "WiDi" creates a virtual monitor that your computer's hardware and software "see" as a real monitor, any second monitor that you already have or add to your computer will be treated as a third monitor and this will have some strange effects on versions of "Windows.." prior to "Windows 10".
"WiDi" DETAILS (continued)

- A USB "DisplayLink" adapter (for connecting a second monitor to a computer) interferes with the ability to connect to a "Microsoft Display Adapter"
"WiDi" DETAILS (continued)

- "WiDi"-capable computers are not compatible with "Internet Connection Sharing":

"WiDi" DETAILS (continued)

• If you are using the internal WiFi adapter of a WiDi-capable laptop or desktop is already being used for "Internet connection sharing" (to another network adapter), the "Internet connection sharing" will be disconnected when you make a WiDi connection to the TV
"WiDi" DETAILS (continued)

• If your WiDi-capable laptop is connected via a WiDi connection to a TV, and you then start up "Internet connection sharing", the WiDi connection to the TV will be turned off
"WiDi" DETAILS (continued)

- "WiDi" is a proprietary product of Intel while "Miracast" is one of the standards of the "Wi-Fi Alliance"
"WiDi" DETAILS (continued)

• You will never find a specification for a computer that says that the computer is "Miracast" compatible: Instead, you will find the terms "Wireless Display", "Intel Wireless Display", or "WiDi" in specifications for Windows.. computers
"WiDi" DETAILS (continued)

• The term "Miracast" is used by the computer industry only for tablets and cell phones
"WiDi" DETAILS (continued)

- "Miracast" is called by various other names by different equipment manufacturers:
"WiDi" DETAILS (continued)

- LG calls their Miracast support “SmartShare,” Samsung calls it “AllShare Cast,” Sony calls it “screen mirroring,” and Panasonic calls it “display mirroring.” You might pick up a new Samsung TV, see the “AllShare Cast” logo on the box, and not be aware that this is theoretically a Miracast-compatible TV. You’d probably assume that it only worked with other Samsung devices supporting AllShare Cast — and you might not be wrong, considering how many theoretically compatible Miracast devices are incompatible with each other!
"WiDi" DETAILS (continued)

- AMD's "**AMD Wireless Display**" is not compatible with "Intel Wireless Display" ("WiDi").


  According to this Web site, the Actiontec "Screenbeam" receiver is compatible with "AMD Wireless Display" (in addition to being compatible with "Intel Wireless Display" ("WiDi")).
"WiDi" DETAILS (continued)

"WiDi" DETAILS (continued)

- "WiDi" receivers for your TV or (second) monitor:
  - Actiontec "ScreenBeam Receiver"
  - Microsoft Display Adapter
  - Netgear "Push2TV"
"WiDi" DETAILS (continued)

- "WiDi" receivers for your TV or (second) monitor:
  - Actiontec "ScreenBeam Receiver" ($70, best one that we tested)
  - Microsoft Display Adapter ($50, poor documentation, cannot attach with an HDMI extension cable that is longer than 6 inches)
  - Netgear "Push2TV" ($60, found positive review but we did not test this model)
"WiDi" DETAILS (continued)

• "WiDi" receivers for your TV or (second) monitor:
  ▪ Details about the Actiontec "ScreenBeam Receiver":

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Actiontec SBWD100A01 ScreenBeam Pro Wireless Display Receiver for WiDi Laptops/ Miracast Devices
Actiontec SBWD100A01 ScreenBeam Pro Wireless Display Receiver for WiDi Laptops/ Miracast Devices
by Actiontec

Price: $69.99 & FREE Shipping. Details

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- Wirelessly beam the display of your laptop, smartphone or tablet screens directly onto your HDTV.
- Extend your device screen for multitasking and entertainment. Write emails or browse the web during a video broadcast.
- The first wireless receiver to fully support 4th Generation Intel WiDi features. Works with Wi-Fi certified Miracast smartphones and tablets.
- Delivers smooth high-definition video with lower latency for all content, including 3D, Blu-ray and premium online video.
- For notebooks and Ultrabooks with Intel WiDi 3.5 and higher, or Wi-Fi Certified Miracast smartphones and tablets
Price: $69.99 & FREE Shipping.
"WiDi" DETAILS (continued)

- Physical installation of the Actiontec "ScreenBeam Receiver" into the HDMI port of a TV or a monitor:
HDMI plug of HDMI cable plugs into HDMI jack of TV or monitor.

Power adapter plugs into power outlet.
"WiDi" DETAILS (continued)

• "WiDi" receivers for your TV or (second) monitor:
  - DETAILS ABOUT THE "MICROSOFT DISPLAY ADAPTER":

"WiDi" DETAILS (continued)

• The "Microsoft Display Adapter", model = 1628, is a WiDi receiver for a TV or a (second) monitor:
Microsoft Wireless Display Adapter
by Microsoft
Microsoft Wireless Display Adapter
by Microsoft

⭐⭐⭐⭐⭐ 111 customer reviews  |  64 answered questions

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11 left in your cart
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"WiDi" DETAILS (continued)

• Similar to "EZCast", a USB-type power supply is not included:
HDMI plug of HDMI cable plugs either directly or by means of a 6-inch or shorter HDMI extension cable into the HDMI jack of a TV or a monitor.

USB plug plugs into a USB port or a USB-type power supply to supply power for the "Microsoft Display Adapter".
"WiDi" DETAILS (continued)

"WiDi" DETAILS (continued)

"WiDi" DETAILS (continued)

"WiDi" DETAILS (continued)

"WiDi" DETAILS (continued)

- Once you get over the terrible documentation and the limited cable length for the HDMI plug, you have a great product.

- See
  https://www.thurrott.com/hardware/1454/use-microsoft-wireless-display-adapter
"WiDi" DETAILS (continued)

• "WiDi" receivers for your TV or (second) monitor:
  ▪ DETAILS ABOUT THE NETGEAR'S "PUSH2TV":

NETGEAR Push2TV Wireless Display HDMI Adapter with Miracast (PTV3000) Certified for use with Kindle Fire HDX by Netgear
NETGEAR Push2TV Wireless Display HDMI Adapter with Miracast (PTV3000) Certified for use with Kindle Fire HDX
by Netgear

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