



Wi-Fi CERTIFIED™ Wi-Fi Direct

Frequently Asked Questions

What exactly is Wi-Fi CERTIFIED Wi-Fi Direct?

Wi-Fi CERTIFIED Wi-Fi Direct is an upcoming program from the Wi-Fi Alliance that defines a new way for Wi-Fi devices to work together. Wi-Fi devices will be able to make direct connections to one another quickly and conveniently to do things like print, sync, and share content even when an access point or router is unavailable. Wi-Fi Direct connections will work at typical Wi-Fi speeds and range, protected by WPA2® security protocols and including WMM® Quality of Service mechanisms.

Only Wi-Fi Alliance member companies will be able to offer Wi-Fi CERTIFIED Wi-Fi Direct capabilities on their products.

Is Wi-Fi Direct based on the IEEE 802.11s (Mesh) or 802.11z (Direct Link Setup) standards?

No. The specification for Wi-Fi Direct was developed within the Wi-Fi Alliance by member companies. It operates on 802.11 devices but is not linked to any specific IEEE 802.11 amendment.

When will Wi-Fi Direct devices be available?

We expect Wi-Fi Alliance member companies to begin designing and testing Wi-Fi Direct products in early 2010, and to begin certifying products in mid-2010.

Will Wi-Fi Direct interoperate with my other Wi-Fi devices?

Yes. A Wi-Fi CERTIFIED Wi-Fi Direct device will be able to make device-to-device connections with existing 802.11 a/g/n Wi-Fi CERTIFIED gear.

Will legacy devices be upgradeable to support Wi-Fi Direct?

Wi-Fi Direct does not require new hardware to operate, so some vendors may offer software upgrades. However, it's important to note that interoperability between Wi-Fi Direct devices and legacy devices is a key element of the specification, so even non-upgraded devices can join a Wi-Fi Direct network.



What will Wi-Fi Direct performance be like?

Wi-Fi CERTIFIED Wi-Fi Direct devices support the same performance profiles of regular Wi-Fi devices. That means data rates that can exceed 250 Mbps and whole-home coverage in the case of Wi-Fi CERTIFIED n devices. For devices based on 802.11 a or g, data rates will be about 54 Mbps and a coverage range of about 100 meters.

How many devices can connect?

A Wi-Fi Direct network can be one-to-one, or one-to-many. The number of devices in a Wi-Fi Direct network is expected to be smaller than the number supported by traditional standalone access points intended for consumer use.

Can a device simultaneously connect to a regular Wi-Fi network and a Wi-Fi Direct network at the same time?

All Wi-Fi Direct devices will allow the user to connect to an infrastructure or a Wi-Fi Direct network. Some Wi-Fi Direct devices will support connections to both an infrastructure network and Wi-Fi Direct network at the same time (e.g. a laptop may support an infrastructure connection while also belonging to a Wi-Fi Direct network).

Can a Wi-Fi Direct network cross connect to an infrastructure network for internet connectivity?

Yes. A single device in a Wi-Fi Direct network may share internet connectivity with other devices in the Wi-Fi Direct network by creating simultaneous infrastructure and Wi-Fi Direct connections. The Wi-Fi Direct network operates in a security domain separate from the infrastructure network even when cross connected.

Will this replace my access point or router?

No. Wi-Fi Direct is intended to offer a quick and convenient way to connect devices to each other. An access point or router will still be the way that Wi-Fi devices connect to the internet. Wi-Fi Direct can provide a cross connection to an internet connection supplied by a router but a Wi-Fi Direct network is not a substitute for a router, which has additional functionality optimized for a sustained internet connection.



Does Wi-Fi Direct work on both frequency bands?

Yes, Wi-Fi Direct can operate in both 2.4 GHz and 5 GHz. Devices operating in the 2.4 GHz frequency band only and devices operating in both the 2.4GHz and 5 GHz frequency bands can be certified for Wi-Fi Direct.

How does Wi-Fi Direct work?

Wi-Fi Direct connects devices using an approach similar to the traditional AP-to-client connection used in Wi-Fi CERTIFIED infrastructure networks. One Wi-Fi Direct device will provide the connection to other participants in a Wi-Fi Direct network in lieu of an AP. Wi-Fi Direct does not require special hardware compared to traditional Wi-Fi AP devices.

Which Wi-Fi Direct device will create and manage the connection?

Devices will conduct a negotiation to determine which device is most appropriate. This may be determined by considering a number of factors including but not limited to power management, number of connections supported, richness of user interface and services being offered. The Wi-Fi Direct device that offers the connection manages the creation, admission to, presence and termination of that Wi-Fi Direct network.

Can all devices start a Wi-Fi Direct network?

All Wi-Fi Direct devices can start a Wi-Fi Direct network, but it's most likely that devices with more computing power (laptops, handsets, gaming devices) will more frequently manage the network than those with less power (digital cameras, printers, etc.).

How will security work for Wi-Fi Direct?

Wi-Fi Direct networks operate in a security domain that is independent from any infrastructure network. This means that they have protection of WPA2, but are managed separately from the security system in the AP-based network (home, enterprise, hotspot). This means both the Wi-Fi Direct and the infrastructure networks can be protected, but users don't need credentials for the infrastructure network to connect to the Wi-Fi Direct network.

Does Wi-Fi Direct work in enterprise environments?

Yes. The specification was written to be enterprise-friendly and incorporates some important management features.



Wi-Fi Direct devices will be identifiable as Wi-Fi Direct devices to infrastructure access points. APs may also be able to turn off Wi-Fi Direct devices and/or configure their parameters including channel.

Wi-Fi Direct will be an important technology for enterprise environments, enabling applications such as file transfer, printing, and display without requiring access to the WLAN. We also expect that Wi-Fi Direct will be used in enterprises to temporarily connect mobile data terminals and other portable devices for short-term tasks such as data transfer.

How is Wi-Fi Direct different from ad-hoc mode?

Wi-Fi Direct will offer discovery as a compelling feature that will make it easy to enable applications. Wi-Fi Direct incorporates several important innovations in Wi-Fi technology, such as higher data rates, enterprise manageability, WMM® Quality of Service mechanisms, and power management protocols to peer-to-peer connectivity.

What about power management protocols? Is Wi-Fi Direct a power hog?

Most Wi-Fi Direct devices will be power-sensitive, and in many cases, battery-powered. Wi-Fi Direct devices can support WMM® Power Save, and the Wi-Fi Direct specification also defines new power saving mechanisms.

How will service discovery work?

Like all Wi-Fi technologies, Wi-Fi Direct creates IP-based networks between the devices, allowing existing service discovery methods to work just as they do over a wireless LAN today-- including Bonjour and UPnP.

Wi-Fi Direct defines a new pre-association discovery method, giving Wi-Fi Direct devices the ability to discover devices and limited information about device services prior to association (and before having an IP address). Pre-association discovery improves the user experience - users will know whether a desired service (e.g. printing) will be available on the Wi-Fi Direct network before connecting.