What Is Wake-on-LAN, and How Do I Enable It?

Wake-on-LAN (sometimes abbreviated WoL) is an industry standard protocol for waking computers up from a very low power mode remotely. The definition of "low power mode" has changed a bit over time, but we can take it to mean while the computer is "off" and has access to a power source. The protocol also allows for a supplementary Wake-on-Wireless-LAN ability as well.

This is useful if you plan to access your computer remotely for any reason: it allows you to retain access to your files and programs, while keeping the PC in a low-power state to save electricity (and of course, money). Anyone who uses a program like VNC or TeamViewer or keeps a file server or game server program available, should probably have the option enabled for the sake of convenience.

Wake-on-LAN is dependent on two things:
Your motherboard must be hooked up to an ATX-compatible power supply, as most computers in the past decade or so are.

Your Ethernet or wireless card must also support this functionality. Because it is set either through the BIOS or through **your network card's** firmware, you don't need specific software to enable it. Support for Wake-on-LAN is pretty universal nowadays, even when it's not advertised as a feature, so if you have a computer built in the past decade or so, you're covered.

The Magic Packet: How Wake-on-LAN Works

Wake-on-LAN-enabled computers essentially wait for a "magic packet" to arrive that includes the network card's MAC address in it. These magic packets are sent out by professional software made for any platform but can also be sent by routers and internet-based websites. The typical ports used for WoL magic packets are UDP 7 and 9. Because your computer is actively listening for a packet, some power is feeding your network card which will result in your laptop's battery draining faster, so road warriors should take care to turn this off when you need to eke out some extra juice.

Magic packets are usually sent over the entirety of a network and contain the subnet information, network broadcast address, and the MAC address of the target computer's network card, whether Ethernet or wireless. The above image shows the results of a packet sniffer tool used on magic packet, which brings into question exactly how secure they are when used in unsafe networks and

over the internet. On a secure network, or for basic home use, there shouldn't be any practical reason to worry. Many motherboard manufacturers often implement software along with Wake-on-LAN capabilities to offer hassle-free or largely configuration-free usage scenarios.