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Computer buyer's guide for small business

Docking Stations and Port Replicators

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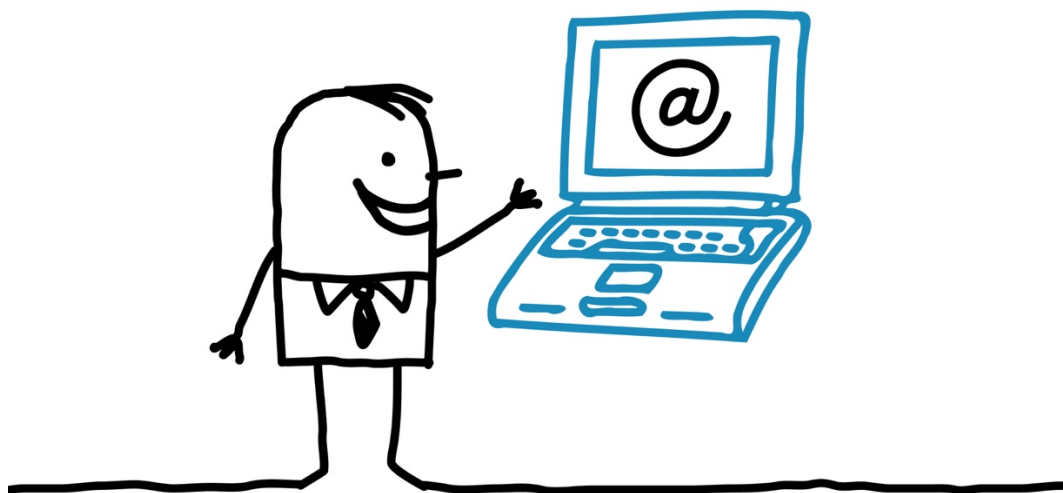
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Introduction

When using a portable computer in an office, it is significantly more comfortable to use a full size monitor, full size keyboard, and an external mouse. Unfortunately, connecting these devices can be a bit of a hassle, so it's not unusual for people to hunch over their portable computer and do without the benefits that external devices can provide.

When I say "portable computer" I'm referring to a tablet, netbook, hybrid/ 2 in 1, Ultrabook or laptop.



Figure 0-1: Lenovo docking station, using a cable connection and vertical dock (left), Lenovo docking station, using a horizontal dock with built in connector (right) (Source: Lenovo).

Docking stations and port replicators provide a neat solution to the hassle factor described above. By connecting a portable computer to one device, connection to multiple external peripherals is instantly provided.

In addition, docking stations and port replicators can provide more outputs, and different interfaces types, than were available on your portable computer. Thus, for example, giving a portable computer with just one HDMI display output, the ability to connect two DVI displays.

The benefit of docking stations and port replicators is clear: convenient and flexible connectivity to peripheral devices for portable computers.

Docking station versus port replicator

In terms of definitions, port replicators use USB connections to computers, and do not include computer power via the same connection. Docking stations use their own proprietary connections and include computer power. There are various other differences as summarised below.

	Docking stations	Port replicators
Computer connection method	Propriety connector	USB
Power	Included via proprietary connector	Not via USB connection, however sometimes available via a second connection.
Computer compatibility	Manufacturer specific models. Note, new computer model are often not backward compatible with older versions of docking stations, requiring docking stations to be repurchased.	In general, computer agnostic, as long as a USB connection. That said, performance is optimised using USB 3.0 rather than USB 2.0.
Software	Computer manufacturers will often include their docking station software on their computer models.	Generic port replicators require software installed on the computer to function fully. Computer manufacturers will often include their port replicator software on their computer models.
Video resolution	Resolution tends to be better	Resolution tends to be lower
Physically lock a computer in place	Sometimes	No

Table 0-1: Port replicators versus docking stations.

As a point of trivia, regardless of manufacturer, nearly all port replicators are based on technology from a company called DisplayLink.

In terms of similarities, docking stations and port replicators have equivalent options for peripherals covering all common interfaces. The available options really depend on manufacturer and what you need.

Examples

The following table provides a summary of three different options available from Lenovo. I have provided this only to illustrate the variations available, even from the same manufacturer.

	Lenovo ThinkPad OneLink Dock	Lenovo ThinkPad OneLink Pro Dock	Lenovo USB 3.0 Port Replicator with Dual Video
Type	Docking stations	Docking station	Port replicator
Price	\$120/ £89	\$179/ £149	£169 (not available in the US)
PC connection	OneLink connector (proprietary)	OneLink connector (proprietary)	USB
Displays supported	One	Two	Two
Display interfaces	HDMI interface.	1 × DisplayPort 1 × DVI	2 × DVI
Maximum resolution	1920x1200	2560x1600 (with single display)	2048 x 1152 (with single display)
USB connections (for use with keyboard, mouse)	2 × USB 3.0 2 × USB 2.0	4 × USB 3.0 2 × USB 2.0	5 × USB 3.0
Audio connections (for use with some headsets)	Single 3.5mm headset jack	Single 3.5mm headset jack	Single 3.5mm headset jack
Power for PC	Yes	Yes	No
Network connection	Gigabit Ethernet (10/1000)	Gigabit Ethernet (10/1000)	Gigabit Ethernet (10/1000)
Lock computer	No	No	No
Compatible computers	Specific ThinkPad models	Specific ThinkPad models	Any notebook running Windows software

Table 0-1: Comparison of docking stations and a port replicator from Lenovo.

Recommendation

If you are selecting a docking station or port replicator, the following items are what you should consider:

1. If you want to include power without an additional connection, then choose a docking station.
2. If you want a streamlined security option, choose a docking station with a key lock (this is not available in a port replicator).
3. Match the native resolution of your displays to the resolution capability of the docking station or port replicator (see chapter **Error! Reference source not found.** on screens and displays for more details).
4. Match the display and other peripheral interfaces to the interfaces on the docking station or port replicator.
5. If you choose a port replicator make sure your portable computer can connect via USB 3.0, so as to get optimal performance (USB 2.0 can result in performance issues).
6. Verify that the docking station or port replicator supports your computers operating system.

Irrespective of the choice between port replicator or docking station, I recommend you match the manufacturer to the computer maker. This will help avoid any unintended incompatibility issues.

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About the author

Richard is the founder of deBaffle.net. He has over 13 years' experience in the information and communications technology industry and has held senior management roles in both government and the private sectors. Richard has extensive experience working with organisations to deliver technologies that meet business objectives. This includes strategy development, procurement and implementation.

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