

Business DSL Learning Guide

[Topic 1: Connection Quality](#)

This topic will help you understand the differences between a dedicated and a shared DSL line. You'll discover why having a dedicated line is critical to the function of your business.

[Topic 2: Speeds](#)

See why fast upload and download speeds are critical to the success of your business. We'll also show you how DSL compares with other Internet Access products.

[Topic 3: Networking Options](#)

Discover how DSL works and learn about the different networking configurations that are available for your business.

[Topic 4: Equipment Selection](#)

XO supports business-quality routers so you can get the most out of your investment. If you already have a DSL router, then see if it meets the XO system requirements.

[Topic 5: Web Hosting](#)

Getting a website is simple. Learn what types of hosting packages are available from XO.

[Topic 6: Guarantees](#)

Why is XO Business DSL headache-free? Read all about the guarantees we offer, and you'll see.

Connection Quality

Dedicated Line vs. Shared Line. What's the Difference?

Shared Line

Shared DSL lines, most of which are ADSL, allow a DSL provider to run DSL over your telephone line to share voice service and Internet access. How can DSL be shared on a telephone line? A telephone line consists of two frequencies - high and low. The high frequency is used for voice, while the low frequency is used for the DSL service.

Most shared DSL lines are "Rate Adaptive", which means that the speed will fluctuate depending on the number of DSL users on the line, the actual physical line conditions, and the distance from your business to the DSL provider. Further, with a shared line, end-users are not guaranteed a specific download and upload speed. Many providers will offer shared DSL lines to reduce costs, even though the consistency of the speed may suffer. Most of the time, these speeds are on a "best effort" basis and providers only guarantee about 50% of the bandwidth. Some providers offer no guarantee at all!

Dedicated Line

A dedicated DSL line, typically business-grade SDSL, is a dedicated pair of copper wires that runs from business location to the DSL provider's Central Office. A dedicated DSL line is like a new telephone line, but utilized solely for DSL.

Most dedicated DSL lines come with a Service Level Guarantee of service. XO® Business DSL provides a service guarantee of 80%, meaning that if at any time your speed is less than 80% for the service you signed up, then your service will be downgraded to the next speed and price.

Bottom Line

If reliability is a concern for your business, then get a dedicated SDSL line, like [XO® Business DSL](#).

Speeds

Fast Upload and Download Speeds. Does it really matter?

ADSL (slow upload / fast download)

ADSL provides fast download speeds while its upload capability is relatively slow. Because of this, ADSL is more suited to a residential product where the casual Web surfer has little need for high speed upstream to the Internet. Because of this, XO does *not* offer ADSL.

SDSL (fast upload/ fast download)

XO chooses SDSL to meet the demands of business customers. Many "push" and "pull" applications such as e-mail, file transfer (FTP), multimedia, electronic commerce, and Web hosting have brought about the requirement for high speed data transfer, upstream as well as downstream.

See our [How DSL Works](#) section for more information.

Kilobits (Kbps) vs Kilobytes (KB/s)

There is a difference between Kilobits and Kilobytes. See the direct translations and how it applies to the transfer of files across the Internet or your network.

Internet Access Speed Comparison

	Cable	ADSL	SDSL	DIA (T1 and greater)
Good for	Consumers Downloading information and files off the Internet.	Consumers Downloading information and files off the Internet.	Businesses Sharing information between one or more computers. Hosting a commercial Web server.	Businesses Same as SDSL, except with a higher threshold for speed and capacity.
Pros	Fast download speeds. Cheap.	Fast download speeds. Relatively inexpensive.	Very reliable. Fast upload/download speeds. Guaranteed	Same as SDSL.

			bandwidth. Business-grade service.	
Cons	Unreliable (frequent disconnects). Sharing Internet with neighborhood, providing a slow connection during peak surfing times.	Relatively unreliable (line may go down unexpectedly). No guarantee. Slow upload speed.	Relatively expensive compared to consumer-grade service.	Expensive for business-grade service.
XO related product	<i>Not offered</i>	<i>Not offered</i>	XO® Business DSL	XO® Dedicated Internet Access (DIA)

Bottom Line:

If fast upload and download speeds are a concern for your business, then SDSL is your most economical choice -- and it is as reliable as a T1.

Networking Options

Planning ahead for your network will be important for your business when your DSL circuit gets installed. This topic provides an overview of [how DSL works](#) and the different types of network configurations available.

Network Configurations

XO offers different networking configurations to fit the needs of your business. This section will give you a better understanding of the networking and the different options available and help you make the right decision for your business.

	Private IP Configuration	Public IP Configuration (optional)
Description	Allows you to setup your own network, which your business controls and administers. With NAT (Network Address Translation), you can have multiple IP addresses on your network, which will appear as one IP address to the public. You can have up to 253 private IP addresses for your business, at no cost.	Create your network by assigning each of your computers with unique public IP addresses (static IP addresses). Public IPs can be purchased in blocks. You will need to purchase one public IP for every computer you wish to connect to the Internet. XO offers up to 253 public IP addresses (static IP addresses).
Pros	<ul style="list-style-type: none"> Free - No additional cost for setting up a private network. Security - Your network will be hidden from hackers and other malicious applications. 	<ul style="list-style-type: none"> Dedication - Allows your business to host dedicated servers and the ability to access computers remotely per public IP address.

Cons	<ul style="list-style-type: none">• Private - No way to access your computers remotely or host your own server without special software.	<ul style="list-style-type: none">• Cost - Public IPs cost additional money because each address gives you a permanent location (or identifier) on the Internet.• Learning curve - This setup is ideal for network administrators who understand how to setup a secure network. Fortunately, XO offers security solutions to meet your business security needs.
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Bottom Line:

XO recommends a Private IP configuration due to security, cost and administrative benefits.

Equipment Selection

Selecting the right equipment for your DSL is important because not all DSL routers are compatible with the different flavors of DSL. This topic will show you more information about the router provided by XO, and the requirements that you will need to check if you are providing your own modem.

XO Certified DSL Equipment

Efficient Networks® 5851 SDSL Router

Efficient Networks® Business Class DSL routers provide DSL access for up to 100 or more users with robust firewall and a four port Hub.

Features and Benefits

- **Versatile**
Supports SDSL with a single, common routing code which makes network management simple.
- **Secure**
Includes NAT and a built-in, IP filtering firewall with scripting.
- **Scalable**
Supports multiple subnets and up to 100 or more users.

Have your own DSL Router?

XO supports the following modem/routers:

- Efficient Networks® 5271 IDSL Router (IDSL only)
- Efficient Networks® 5351 SDSL Router
- Efficient Networks® 5851 SDSL Router
- Efficient Networks® 5871 IDSL Router (IDSL only)
- Flowpoint 144 IDSL Router (IDSL only)
- Flowpoint 2200 SDSL Router

- Netopia 3100 IDSL Router (IDSL only)
- Netopia 7200 SDSL Router

Bottom Line:

XO recommends going with an Efficient Networks® router due to reliability and performance. Efficient Networks is a registered trademark of Efficient Networks, Inc.

Web Hosting

Did you know that XO® Business DSL comes with Web site hosting? We call it Web Basics because it's simple to setup and run your Web site. Below are some of the features that come with a Web Basics account. Best of all, there is *no setup fee and no monthly fee!*

Web Basics

Email made easy

Web Basics comes with **10 email accounts**. The email addresses you receive at XO will look like you@yourwebsiteaddress.com where yourwebsiteaddress is the domain name you own or would like to purchase. The email addresses can be easily integrated into Microsoft Outlook or if you are away from your computer you can check your email through a Web browser via Web Mail. All e-mail accounts can access Junk Mail Filters and Virus Filtering features.

Ample Web Space

Web Basics comes with **100 MB of disk space**. That's approximately 1000 Web pages*, depending on the size of the Web page and the images contained on the page.

Traffic to Your Site

Web Basics comes with **1 GB of bandwidth**. Bandwidth refers to the number of visitors that come and go from your Web site. Your Web Basics account can sustain thousands of visitors per month.

Online Control Panel

Everything you need to **manage your Web site can be done online**. We give you the tools to manage your account, check order status, update your Web site pages and graphics, as well as measure the traffic and disk space used on your Web site. You can even edit your Web pages online using our online Web editor.

DNS Management

Simplified management of complex DNS entries and servers with Primary and Secondary DNS resolution or Secondary Only DNS. You have control to provision Address, CNAME, and MX records. Supports Reverse DNS and Reverse Address.

Secondary Mail Exchanger (MX)

If you manage your own mail server, use your Web Basics account to set up XO mail servers as a secondary point if your mail server goes down. Mail is queued in the XO mail servers and XO will attempt to deliver mail to your mail server hourly. Great insurance if an email server outage occurs!

Perimeter Email Protection (PEP)

If you manage your own mail server, use your Web Basics account to set up XO mail servers to protect on-premise mail servers from Denial of Service, spam, and dictionary

attacks. Optimize your mail server performance by stopping unwanted mail and reducing total mail volume allocation. A very affordable solution to fight the rising cost of spam!
[Learn More](#) [What is PEP?](#)

Need More than the Basics?

If you need more than what the basic plan offers, then XO has more extensive Web site hosting plans to match your business needs, as you can see below. Also, at any time you need to upgrade to another plan, or even just add more disk space, traffic or email boxes, you can use the XO Online Control Panel to make the changes. It's simple and flexible.

Web Basics Upgrade Plans	WEB-1	WEB-2	WEB-3
Monthly Fee	\$15.95	\$43.95	\$79.95
Setup Fee	none	none	none
Email Accounts/Distribution Lists	40	70	100
Disk Space	250 MB	500 MB	1000 MB
Junk Mail Filters	yes	yes	yes
Virus Filtering	yes	yes	yes
Traffic	15 GB	25 GB	35 GB
MySQL Database	Included	Included	Included
SSL	Yes	Yes	Yes

*Assuming that the average size per Web page is 100 KB.

**Assuming that the average number of Web pages and graphics on your Web site that open in a visitor's browser is equal to 200 KB.

Bottom Line:

You can't go wrong with getting a Web site from XO at no cost. All you need to do is transfer your existing domain name or purchase a new domain name and host it with XO for free.

Guarantees

XO® is so confident about the quality of your DSL service that, if you're not satisfied with your service for any reason within the first three months, then we'll switch you back to your previous DSL provider for free! For more information, see our 3-Month Guarantee.

You can't go wrong with choosing XO. Check to see [if XO® Business DSL is available](#) at your location.

How DSL Works

DSL is a technology that turns ordinary phone lines into high speed Internet connections.

Why does dial-up service only offer speeds up to 56 Kbps?

DSL is different from dial-up because digital coding techniques are used to squeeze up to 99% more capacity out of a phone line without interfering with your regular phone services.

Your **(A)** computers are connected to the **(B)** DSL router. The router is then wired to the **(C)** DSL line, which the phone company installs at your business or home location. Finally, that line is connected via phone lines to the **(D)** provider's Central Office. Finally, your provider connects you through their network to the Internet **(E)**.

Kilobits vs. Kilobytes

When looking at DSL speeds, be aware that the speeds are listed in Kilobits per second (Kbps) and not Kilobytes per second (KB/s). This is important to understand the speed you will actually receive when your DSL circuit is up and running and you begin downloading or uploading information over the Internet or your network. Below is a comparison table of the differences between a Kilobit and a Kilobyte.

Kilobits (Kb)	Kilobytes	Download or Upload Time*	Price
144 Kbps	18 KB/s	1 minute	Check Availability
384 Kbps	48 KB/s	21 seconds	Check Availability
768 Kbps	96 KB/s	11 seconds	Check Availability
1,100 Kbps (1.1Mbps)	138 KB/s	7.5 seconds	Check Availability
1,500 Kbps (1.5Mbps)	187.5 KB/s	5 seconds	Check Availability

*Based on transferring a 1 MB file over a network with no congestion. Times are approximate.

Translations:

1 Kilobyte (KB) = 8 Kilobits (Kb)

1 Megabyte (MB) = 1024 Kilobytes

Frequently Asked Questions

Q: What is DSL?

A: DSL is a high-speed Internet access technology that allows computers to send and receive data through copper wires (i.e. telephone wires). Invented in 1989, this technology has allowed millions of consumers and businesses to get high-speed Internet access at a very low cost.

There are two popular flavors of DSL - ADSL and SDSL. Learn more about the differences between ADSL and SDSL. XO only offers SDSL ([XO® Business DSL](#)) - it provides the critical upload speed that businesses need to transfer large files and data.

Q: Is DSL secure?

A: Unlike cable modems and shared ADSL services, SDSL is kept separate and isolated to the XO Central Office. Traffic from one user's DSL connection is therefore never visible on the XO DSL network.

If you plan to run a Web server or access your computer remotely, then you will need to provide your own level of security to protect unwanted access to your computer. Fortunately, XO offers [security solutions](#) that help protect your business.

Q: Which speed do I choose?

A: A good way to determine which DSL speed to choose is by taking a look at how much data you send and receive on a daily basis. Compare it with the DSL speeds offered by XO. In most cases, you will probably need no more than a 384 Kbps SDSL line.

Q: What is a Static IP address?

A: An IP address is an address that identifies a computer on the Internet or within your company's network. A public IP address (or static IP address) allows people outside of your network to view your computer. This makes it possible for you to host a server, or even have employees remotely access their machines from another machine outside of work.

For more information on IP Addresses, see our [Networking Options](#) topic.

Q: Why do DSL companies always have me check for service availability?

A: Unfortunately, DSL has a limited range of service from the provider's Central Office to a business or home location. For ADSL service, the range is usually 15,000 feet (or about 3.4 miles). With SDSL, the range is a bit better - 18,000 feet (or about 4 miles). Keep in mind that the closer your location is to the Central Office, then the more likely you will qualify for a higher speed DSL line. Finally, the ISDL option has a range of about 40,000 feet (or about 7.6 miles).

[Check service availability for XO® Business DSL.](#)

Q: have my own DSL router. Can I use it with your service?

A: Check our [Equipment Selection](#) page to see if your router is supported by XO.

Glossary

ADSL

ADSL (Asynchronous Digital Subscriber Line) is a type of DSL circuit that provides a **different** download and upload speed (hence the term asynchronous). ADSL is typically associated with consumer, or residential, DSL because generally consumers require a fast download speed only to surf the Internet.

Central Office

The Central Office, or CO, is a place that houses all the Internet access lines in a particular area. It is a building where the phone switching equipment is found. DSL lines running from a subscriber's home or business connect at their local Central Office first, then to the local phone company (e.g. XO®, AT&T, etc.,), CLEC (SBC, Verizon, etc.,) or ISP (Covad, AOL, etc.). Although the local phone company owns the CO, it may contain equipment from one or more other CLECs or ISPs who lease space there.

CLEC

CLEC stands for **Competitive Local Exchange Carrier**. A term coined for the deregulated, competitive telecommunications companies envisioned by the Telecommunications Act of 1996. The CLECs compete on a selective basis for local exchange service, as well as long distance, international, Internet access, and entertainment (e.g., cable TV and Video on Demand).

DHCP

DHCP stands for **Dynamic Host Configuration Protocol**. Essentially, DHCP is a way for network administrators to easily manage the distribution of IP addresses to computers on your company's network. Instead of having an IP address permanently assigned to one of your computers, DHCP will assign the IP address to your computer only when it turns on. This way you don't have to worry about two machines having the same IP address, which would cause an error. DHCP will know not to assign the same IP address to more than one computer.

Domain Name

A domain name is simply your web site address (e.g. www.123company.com). The domain name actually covers the true address of the web site (i.e. the IP Address). Because IP Addresses are long and hard to remember, domain names were invented to make the recognition easier.

Download Speed (Downloading)

Downloading refers to the process of *retrieving* information from the Internet. Examples of downloading are:

- Browsing a Web site (the information that is displayed is retrieved from another computer or server)
- Saving a file from a Web site, like an image or an mp3
- Receiving an email from another person (the information you see in your email program is retrieved from another computer or server)

Uploading refers to the process of *sending* information over the Internet. Examples of uploading are:

- Sending an email
- Transferring a file over the Internet, like FTP
- Participating in a document conference with another person or group of people

ISDL

ISDL stands for ISDN **DSL**, and is closer to ISDN download and upload speeds (128 Kbps) than to the much higher rates of ADSL and SDSL.

IP Address

An IP Address (or **Internet Protocol Address**) is an address that identifies a computer on the Internet or within your company's network. When you surf the Internet, you need an address to get to where you want to go - just like you need an address on a letter you mail or a phone number you wish to reach. All IP Addresses are written as XXX.XXX.XXX.XXX, where X is any number between 0 and 9, and where each 3-digit field has a value between 001 and 256.

But doesn't my web site www.123company.com serve as my address on the Internet?

Yes, it does. That's where domain names come into the picture. Read more about them.

ISP

ISP stands for **Internet Service Provider**. Basically, a company that provides access for customers to the Internet and the World Wide Web.

NAT

NAT stands for **Network Address Translation**. NAT enables your company's network to use a public IP address (static IP address) as main IP address to identify your company's network to the Internet (or the public). It also translates that one public IP address into many private IP addresses so that your computers can be identified within your company network, but not be visible to the public. Your employees can still access the Internet with their computers using private IP addresses, but to everyone else, all your employees will show up as the one public IP address, which as stated above, represents your company's network.

Private IP Address

Private IP addresses are IP addresses that are hidden from the public. Your business can access the Internet, but the public will not be able to see your computer or the rest of your business' computers, essentially keeping your network invisible, or private.

Public IP Address (or Static IP Address)

Public IP Addresses (also known as **Static IP Addresses**) are IP addresses that are visible to the public. Because they are public, they allow other people to know about and access your computer, like a Web server. In some cases, you do not want people to access your computer or you want to restrict certain individuals from accessing your computer or server. If that is the case, you will want to look into security measures to protect your computer. XO® offers several security solutions to help take the time and worry of maintain a secure computer, server and/or network.

SDSL

SDSL (Synchronous Digital Subscriber Line) is a type of DSL circuit that provides the same download and upload speeds (hence the term "synchronous"). SDSL is generally more expensive than ADSL circuits because the upload speed increases the overall consistency and speed of the Internet connection. Also, you will have a better chance of getting SDSL service in your area because the distance required from your location to the provider is longer.

Upload Speed (Uploading)

Uploading refers to the process of *sending* information over the Internet. Examples of uploading are:

- Sending an email
- Transferring a file over the Internet, like FTP
- Participating in a document conference with another person or group of people