

eXtendSM Frequently Asked Questions

1. Q. How does eXtendSM wireless broadband compare to dial-up?

A. Dial-up operates at 56 kbps. eXtendSM operates from 768 kbps to more than 1,500 kbps depending on the service plan subscribed to, a performance improvement of 5 to 25 times better than dial-up. eXtendSM service is 'always on' so you don't need to re-establish your connection each time you want to use it. eXtendSM does not require any phone lines.

2. Q. How does eXtendSM wireless broadband compare to DSL and cable?

A. Unlike DSL or cable, eXtendSM does not depend on the availability of legacy telephone or cable TV infrastructure. This enables eXtendSM to reach those locations where DSL and cable providers are unable or unwilling to go. The eXtendSM service plans offer performance comparable to DSL and Cable Modem, but with some important differences.

- eXtendSM offers better upload speeds than comparably priced DSL or cable service. That is important when uploading pictures and for emailing large files.
- eXtendSM offers quick installation- often in a matter of days, not weeks or months.

3. Q. How does eXtendSM wireless broadband compare to satellite?

A. eXtendSM wireless broadband is sometimes confused with satellite because they are both forms of wireless communication. The difference is that eXtendSM is a terrestrial microwave system that uses short-range wireless links. The latency on these short-range links is comparable to wired links like DSL and cable service so the performance remains high. Satellite links have a large propagation delay due the roughly 23,000-mile (or greater) distance to geosynchronous satellites. This latency imposes a huge performance penalty on two-way interactive applications, regardless of bandwidth speed. For this reason satellite should only be considered as a last resort for Internet service. Satellite service also has limits on the total amount of data that can be transmitted in a month.

4. Q. How does eXtendSM wireless broadband compare to cellular 3G?

A. Typically, cellular 3G is not available outside of metropolitan areas. While the cellular network is providing Internet access in rural areas it is at what is referred to as 1X speed, which is comparable to dial-up.

5. Q. How secure is Pixius Communications' eXtendSM Service?

A. There has been much press recently about the security issues of Wireless LAN technology known as 802.11b or Wi-fi. It is true that if the user uses the default settings with most Wi-Fi products it is very easy for an outsider to get onto your network. However, just changing a couple settings can make the network very secure. **eXtendSM is not Wi-Fi.**

The wireless system Pixius uses is completely different than 802.11 or Wi-fi technology. Pixius uses a proprietary system developed by Motorola. This Motorola system has 3 features that make it very secure.

1. Proprietary. The Motorola system uses completely proprietary technology for the Radio Frequency signals as well as the data protocols. So a potential hacker would first have to reverse engineer the Motorola radio equipment.

2. Authentication. No Motorola radio can communicate with our tower radios without first having its MAC address (or Electronic Serial Number) authenticated against our list of valid radios.

3. Encryption. The Motorola Canopy encrypts the user data over the air using 128 bit DES encryption. These characteristics make our service at least as secure as DSL or cable systems. As an example, it would probably be easier to tap into your phone line outside your home than hack through the encryption.

5. Q. Does the weather affect the eXtendSM Service?

A. No. The effects of weather on Microwave radio signals vary based on the frequency used and the distance the signal travels. With the frequencies and distances in our network, signal degradation due to heavy rain, snow, or fog are negligible. The degradation due to heavy rain is less than .2 db and our system is designed with at least a 10 db signal fade margin.

6. Q. How large is the antenna used to provide your service? Will I need a permit or HOA approval for the antenna?

A. One antenna we use within a 2 mile range of an Access Point is approximately 11.5" tall x 3.5" wide and weighs less than 1 pound. To extend out to 10 miles a small elliptical reflector is added that measures approximately 18"x24". Another antenna option measures approximately 18" tall and 12" wide.

Section 207 of the Telecommunications Act of 1996 prohibits restrictions on the use of "Over-the-Air Reception Devices" from government (cities or counties) or non-government (landlords or homeowner associations) entities. The ruling pertains to antennas less than 1 meter in diameter and less than 12 feet above roofline. You may still want to contact your homeowners association or landlord for any guidelines they may have on placement of the antenna. For more information, you can get a fact sheet from the FCC at www.fcc.gov/mb/facts/otard.html or contact us with any questions.

7. Q. Are there any health concerns with the eXtendSM wireless signal?

A. No. The technology used by Pixius operates at very low power levels, similar to a cell phone, and much less than the amount that is emitted by your microwave oven. Also, radio frequency power drops dramatically as you move away from the power source (Access Point- not the subscriber unit). Typically, our antennas would not be placed where any person would be able to stand right in front of it for any significant period of time, such as the top of towers and high rise roof tops with controlled access.

8. Q. What are the requirements for my PC to use Pixius' service?

A. Your PC must have a 10BaseT or 100BaseT Ethernet Network Interface Card (NIC). We do not provide this or load any software onto your computer. All your PC needs is TCP/IP software and a web browser. Windows 95 or newer and MAC OS 8.5 or greater include TCP/IP and a browser.

9. Q. Can more than one computer share the eXtendSM connection?

A. Yes, eXtendSM is capable of providing broadband service for multiple computers.

10. Q. What is involved in the installation?

A. A small antenna is installed on or near the roof of your home or business. Then a Cat5 cable is run down and into your home. See our "How it works" section for a more detailed description and pictures of representative equipment.

11. Q. What is the typical lead time to have eXtendSM installed?

A. If your location is within range of one of our Access Points we can usually install within a week.

12. Q. Do I need to have a separate ISP with Pixius' service?

A. No, Pixius is a full service ISP. We provide IP addresses, email accounts, and storage space as part of our service plans.

13. Q. Can I keep my AOL service?

A. Yes. At last check, AOL offers a 'Bring Your Own Access' service. Contact AOL directly for information on this service.

14. Q. Does the Pixius provided router act as a firewall? Do I need a firewall?

A. The Pixius provided router is an administrative demarcation point between the Pixius network and the customer's network. It is not to be considered a firewall. eXtendSM wireless broadband is an "always on" service and therefore it is recommended that you install and maintain a firewall. The firewall helps prevent unwanted and often times unknown attempts to access your computer. This is a normal situation that Pixius has no control over. Please consider installing a firewall to protect your network. Many quality products are commercially available, easy to install and free or at reasonable prices.

15. Q. Why does Pixius manage its network?

A. Pixius manages its network with one goal: to deliver the best possible broadband Internet experience to all of its customers. High-speed bandwidth and network resources are not unlimited. Managing the network is essential to promote the use and enjoyment of the Internet by all of our customers. We use reasonable network management practices that are consistent with industry standards. We also try to use tools and technologies that are minimally intrusive. Just as the Internet continues to change and evolve, so too, will our network management practices to address the challenges and threats on the Internet.

All Internet service providers need to manage their networks and Pixius is no different. If we didn't manage our network, our customers would be subject to the negative effects of spam, viruses, security attacks, network congestion, and other risks and degradations of the service. By engaging in reasonable and responsible network management, Pixius can deliver the best possible broadband Internet experience to all of its customers.

16. Q. How does Pixius manage its network?

A. Pixius uses various tools and techniques to manage its network, deliver the Service, and ensure compliance with the Acceptable Use Policy and the Pixius Terms & Conditions for Residential Services available at http://www.pixiuswireless.com/terms_conditions_res_wireless.php. For Business Services customers the terms and conditions are available at http://www.pixiuswireless.com/terms_conditions_biz_wireless.php. These tools and techniques are dynamic, like the network and its usage, and can and do change frequently. For example, these network management activities may include identifying spam and preventing its delivery to customer e-mail accounts, detecting malicious Internet traffic and preventing the distribution of viruses or other harmful code or content and using other tools and techniques that Pixius may be required to implement in order to meet its goal of delivering the best possible broadband Internet experience to all of its customers.

17. Q. Does network management change over time?

A. Yes. The Internet is highly dynamic. As the Internet and related technologies continue to evolve and advance, Pixius' network management tools will evolve and keep pace so that we can deliver an excellent, reliable, and safe online experience to all of our customers.

18. Q. How does the system work?

A. The network congestion management practice works as follows: If a certain area of the network nears a state of congestion, the technique will ensure that all customers have a fair share of access to the network. It will identify which customer accounts are using the greatest amounts of bandwidth and their Internet traffic will be temporarily managed until the period of congestion passes. Customers will still be able to do anything they want to online, and many activities will be unaffected, but they could experience things like: longer times to download or upload files, surfing the Web may seem somewhat slower or playing games online may seem somewhat sluggish. Typically, Customers are unaware of any changes whatsoever.

The system does not manage congestion based on the online activities, protocols or applications a customer uses, rather it only focuses on the heaviest users in real time, so the periods of congestion could be very fleeting and sporadic.

It is important to note that the effect of this system is temporary and it has nothing to do with aggregate monthly data usage. Rather, it is dynamic and based on prevailing network conditions as well as very recent data usage.

19. Q. Will the system target P2P or other applications, or make decisions about the content of my traffic?

A. No. The system is "protocol-agnostic," which means that the system does not manage congestion based on the applications being used by customers. It is content neutral, so it does not depend on the type of content that is generating traffic congestion. Said another way, customer traffic is congestion-managed not based on their applications, but based on current network conditions and recent bytes transferred by users.

20. Q. How does the network management system impact me and my use of the Pixius High Speed Internet service?

A. With this system, most customers will notice no change in their Internet experience. The goal of congestion management is to enable all users to have access to a fair share of the network at peak times, when congestion occasionally occurs. Congestion management focuses on the consumption activity of individual customer accounts that are using a disproportionate amount of bandwidth. As a result, the large majority of customers will not be

affected by it. Our studies of congestion and data traffic show that on average less than 1% of our high-speed Internet customers are affected by the approach.

21. Q. How often does Pixius expect to use this system?

A. Based on our studies of network traffic, we expect that select portions of the network will be in a congested state only for relatively small portions of the day, if at all.

Pixius will continue to monitor how user traffic is affected by this congestion management system and will make the adjustments reasonably necessary to ensure that our Pixius High-Speed Internet customers have a high-quality online experience.

22. Q. Can you give me some "real world" examples of how much bandwidth consumption would be considered too much? For example, how many movies would I have to download to be affected by this system?

A. Since the technique is dynamic and works in real time, the answer really depends on a number of factors including overall usage, time of day and the number of applications a customer might be running at the same time. First, the local network must be approaching a congested state for our system to even look for traffic to manage. Assuming that is the case, customers' accounts must exceed a certain percentage of their upstream or downstream (both currently set at 70%) bandwidth for longer than a certain period of time, currently set at fifteen minutes.

A significant amount of normal Internet usage by our customers does not last that long. For example, most downloads would have completed within that time, and the majority of streaming and downloading will not exceed the threshold to be eligible for congestion management. And the majority of longer-running applications, such as VoIP, video conferencing, and streaming video content (including HD streaming on most sites) will not exceed these thresholds either.

The point of the system is to deliver the best overall online experience possible. The system will help ensure that all customers get their fair share of bandwidth resources to enjoy all that the Internet has to offer and that includes surfing the web, reading emails, downloading movies, watching streaming video, gaming or listening to music.

23. Q. Does this system apply to both Commercial and Residential services?

A. Yes

24. Q. How is network congestion management related to the 250 GB monthly usage threshold?

A. The two are completely separate and distinct. The network congestion management system is based on real-time Internet activity. The goal is to avoid congestion on our network that is being caused by the heaviest users. The system is different from the 250 GB/month that is the aggregate monthly usage threshold that defines excessive use.

25. Q. What about VoIP providers?

A. Pixius customers who use VoIP providers that rely on delivering calls over the public Internet who are also using a disproportionate amount of bandwidth during a period when this network management system goes into effect may experience a degradation of their call quality at times of network congestion. It is important to note, however, that VoIP calling in and of itself does not use a significant amount of bandwidth.

26. Q. What about streaming video or video downloads? What will happen to them?

A. During periods of congestion, any customers who are using a disproportionate amount of bandwidth – no matter what type or content of the online activity (for example, it does not matter if the content is coming from a Pixius owned site or not) – may be affected by this technique.

27. Q. Does Pixius block peer-to-peer ("P2P") traffic or applications like BitTorrent, Gnutella, or others?

A. No. Pixius does not block P2P traffic or applications like BitTorrent, Gnutella, or others as part of its current network congestion management system.

28. Q. Does Pixius discriminate against particular types of online content?

A. No. Pixius provides its customers with full access to all the content, services, and applications that the Internet has to offer. However, we are committed to protecting customers from spam, phishing, and other unwanted or harmful online content and activities. Pixius uses industry standard tools and generally accepted best practices and policies to help it meet this customer commitment. In cases where these tools and policies identify certain online content as harmful and unwanted, such as spam or phishing Web sites, this content is usually prevented from reaching customers. In other cases, these tools and policies may permit customers to identify certain content that is not clearly harmful or unwanted, such as bulk e-mails or Web sites with questionable security ratings, and enable those customers to inspect the content further if they want to do so.