

## RECOMMENDED SYSTEM REQUIREMENTS FOR PDS ONDEMAND™

These are the requirements your system should meet before using OnDemand. Your performance will also vary based on hardware configurations, network traffic, and local workstation settings.

Recommended Requirements	
Internet Connection	A high speed Internet connection is highly recommended
Router	A business-class router with “QOS” (Quality of Service) Capability
Operating System	Windows® XP SP3, Windows Vista® SP1, Windows 7®, or Intel Mac 10.5 (Leopard) and higher
Applications	<ul style="list-style-type: none"><li>• Thin client for PC or Mac from ACS Technologies</li><li>• Adobe® Acrobat Reader® version 8 or higher</li></ul>
Screen Resolution	A screen resolution of 1024x768 or greater is highly recommended

### Internet Connection Details

The OnDemand service is not a bandwidth intensive application. There are mouse clicks and keystrokes going from your local computer to our OnDemand servers, then updated screens going from the servers back to your local workstation. There is also some additional bandwidth used to maintain the connection. For best results, we recommend a broadband connection to the Internet. The OnDemand system requires a response within 300ms, which is approximately 1/3 of a second. If the Internet lag time exceeds this limit, the connection can be lost, and the session will be disconnected. As you may know, countless factors can affect and degrade the performance of your connection. We therefore cannot promise or guarantee that any particular DSL or cable connection to the Internet will perform satisfactorily.

As a rule-of-thumb, the bandwidth available to you for uploading and downloading must not be less than 30 kbps per OnDemand user. Your ISP's advertised connection speed should actually be significantly greater than this in order to keep the minimum net end-user speed from dropping during peak Internet usage. Again, this is the minimum speed recommended. Ideally, you should exceed this bandwidth. Also note that upload speed is just as important as download speed when using OnDemand.

Here are the number of users who can be supported by various AT&T broadband offerings when only OnDemand is running.

Package 1:

1.5Mbps download = 50 Users

256Kbps upload = 8.5 Users

Package 2:

3.0Mbps download = 100 users

384Kbps upload = 12.8 users

Package 3

6.0Mbps download = 200 users

512Kbps upload = 17 users

We do not recommend using wireless connections for OnDemand. Signal strength and signal quality can vary widely. Many factors can adversely influence the quality of a wireless connection including the use of wireless telephones, microwaves, televisions, radios, air conditioning compressors, etc. Also, the OnDemand service does not tolerate dropped or unreliable network connections which can occur with wireless signals.

We ***do not*** support OnDemand using a satellite broadband service. We have found that the latency (the amount of time it takes data to travel to its destination) in this service does not create a good experience.

### **Router Details**

We recommend using a router that has the capability of handling a sufficient number of IP threads for the traffic generated by the maximum number of concurrent users. Obviously, having 50 to 100 network users connected to the Internet using a residential quality router can be a major bottleneck. When calculating total Internet traffic, take into account e-mail, web browsing, uploading and downloading of files, OnDemand, any video or audio streaming, and all other network use. A residential quality Linksys® router handles 10-12 concurrent IP threads. On the other hand, a Netgear® FVX538 handles 200 concurrent IP threads. A good commercial grade router can be a great benefit.

We have found it to be very beneficial to use a router that has a QOS (Quality of Service) feature. This allows you to specify the priority of certain traffic to the Internet. For instance, all OnDemand traffic to the Internet for ACS or HeadMaster uses port 491. Clients who have set priority for the required port for OnDemand traffic have found dramatic improvement in performance and reliability.