

## Minimum Recommended AccuRev Server Hardware

AccuRev has developed a set of minimum hardware guidelines for use when determining the appropriate AccuRev server for your environment. The guidelines have been developed through a combination of internal benchmarking, and customer services engagements with AccuRev customers on varying platforms. These guidelines are for Intel-based servers only.

As with any set of guidelines, your experience with AccuRev may vary based on your specific configuration and environment. For this reason, we recommend that you contact your AccuRev sales engineer to discuss your AccuRev implementation in detail.

<b>Under 50 Users</b>	
<b>Operating System:</b>	32-bit or 64-bit OS
<b>Processor:</b>	4 CPU cores. Intel Xeon E5640 @ 2.66 GHZ or equivalent AMD
<b>Memory:</b>	4GB DDR3 1066 Mhz
<b>Storage:</b>	SAS, Fiber Channel, or 7200+ rpm SATA.
<b>50-100 users</b>	
<b>Operating System:</b>	64-bit OS
<b>Processor:</b>	4 CPU cores. Intel Xeon E5640 @ 2.66GHZ or equivalent AMD.
<b>Memory:</b>	8GB DDR3 1066 Mhz
<b>Storage:</b>	Raid 1. SAS, Fiber Channel Disks, or SATA. 10K rpm.
<b>100 to 500 users</b>	
<b>Operating System:</b>	64-bit OS
<b>Processor:</b>	8 CPU cores, Xeon X5640 @ 2.66GHZ or equivalent AMD
<b>Memory:</b>	16GB DDR3 1066 Mhz
<b>Storage:</b>	RAID 1+0 . SAS, or Fibre Channel Disks. 15K rpm.
<b>500 to 1000 users</b>	
<b>Operating System:</b>	64-bit OS
<b>Processor:</b>	12 CPU cores. Xeon X5680 @ 3.33 GHZ or equivalent AMD
<b>Memory:</b>	32GB DDR3 1333 Mhz
<b>Storage:</b>	RAID 1+0 . SAS or Fibre Channel Disks. 15K rpm.
<b>Over 1,000 users</b>	
Contact your sales representative for details.	

## Determining the Number of Users

When determining the number of users, it is important to factor in both your hardware upgrade cycle and your growth plans. As end users upgrade their client machines, their expectation of overall system performance will increase. As you add more users over time, the load on the AccuRev server will increase. A good number of users to use for determining the appropriate hardware are the number of users you believe you will have six months before you plan to upgrade your server hardware. For instance, if you upgrade hardware every three years, how many users do you anticipate having in 2 ½ years?

If you are using Continuous Integration servers, you should take their load into account. A good rule of thumb is to count CI servers as 10 users per CI server.

If you are planning for rapid growth, you should select foundation hardware that is easy to scale out as you add more users.

## Replication Considerations

Sizing for a replication server machine is the same as for a regular machine, but make sure to use the number of users that will be accessing that machine rather than the total number of users. If you are using replication, then you should increase the estimated number of users for the master to take into account the number of users directly accessing it plus 25% of the users connecting via replication.

An additional consideration for replication is the network bandwidth between the replica server and the master server. It can be difficult to determine the actual bandwidth available between the replica and the master. It is recommended that you run “accurev diag” from the replica machine to the master. To make sure you are pinging the master, use “accurev diag -H <master machine>:<port>”. If you do not have a dedicated link between the two sites, you should run diag at several points during a normal workday as the available bandwidth available via the internet at large can vary dramatically by location and time of day.

AccuRev recommends dedicated bandwidth of .5Mbits per 25 users, with a minimum of .5Mbits and latency of <300ms. In the event that you have a non-dedicated connection between a replica and the master, keep in mind that there are actually three components to the connection; the bandwidth of the connection from the master site to the internet, the internet, and the bandwidth of the connection from the internet to the replica site. Having a 4Mbit connection at the master and replica sites doesn't actually give you a 4Mbit connection. It means that 4Mbits is the upper bound and the actual bandwidth will vary as the connection between the two ISPs varies.

## AccuRev Server Machine

### Software

AccuRev uses a single, central data repository, located on the AccuRev server machine. Any software running on the AccuRev Server machine that is not specifically supporting the AccuRev installation runs the risk of contending for the resources that AccuRev needs. For instance, if the machine is also acting as a file server for builds or other purposes, then users may find that AccuRev seems slow, even when there are no other AccuRev users currently making requests.

For optimal performance, the server machine should be completely dedicated to AccuRev usage. The hardware recommendations assume that this is the case. NFS, Samba, httpd, print queues, and other similar services should all be disabled. Only AccuRev administrators should use the system, and then only to service the AccuRev machine or software. Reference trees and/or build workspaces should be located on client (user) machines or on dedicated build machines, not on the AccuRev Server machine. Software builds should not use the AccuRev Server machine's processor.

### Memory

Leave open slots for upgrading. It is better to use more memory per slot than to fill all slots.

### Networking

All hardware must support at least a 100Mb Ethernet connection. All deployments of 100+ users must use 1Gb Ethernet.

It is strongly recommended that all build machines be located on the same subnet as the AccuRev Server machine, and that this subnet not include any other machines. The build subnet should use gigabit Ethernet. It is important that all of the equipment in the subnet be locked down to gigabit speeds and not be allowed to autonegotiate. Autonegotiation typically causes the subnet to operate, eventually, at the lowest supported speed.

The network bandwidth usage of AccuRev is similar in profile to ftp. For instance, a keep command on 100 files needs to send a list of 100 files to the server as well as the contents of the files themselves. AccuRev is transaction based and works on whole groups of files at a time. Thus, the full list of file names and contents is sent to the server in one chunk in a single burst. This reduces changes in direction of data transfer to an absolute minimum which effectively removes the impact of any network latency.

### Disk Storage

Disk storage requirements vary not only by how many users, but by how many files, directories and projects and how long AccuRev has been in use. The storage recommendations are only a starting point and customers should have plans in place so they can easily increase their storage requirements, if necessary, over time.

It is strongly recommended that disk storage be either directly attached (DAS) or Storage Area Network (SAN). The use of Network Attached Storage (NAS) is not supported.

### Backup

It is strongly recommended that the AccuRev Server machine be connected to UPS for backup power. In the absence of UPS or on-disk battery backup, write-caching must be turned off to help ensure data integrity in the event of a power outage or disk failure. See the AccuRev Administrator's Guide for more information on ensuring data integrity.