
ABW Hardware Recommendations

Overview

This document is intended to be a general guide for planning an installation of ABW. The recommendations herein are by necessity broad generalizations, but should provide a starting point for budgeting and scheduling.

Assumptions

No other software running on the ABW database server

It is assumed that ABW is the only software running on the server. Should other software be sharing a given server, these hardware recommendations may not be sufficient.

“Normal” reporting pattern

These recommendations assume the installation will be primarily a transaction processing (OLTP) system with a “normal” amount of reporting. Frequent running of CPU-intensive reports may require more powerful hardware and/or setting up a separate Reporting Services server.

User Count Definition

For the purposes of this document, user counts are based on concurrent active ABW users who are performing approximately 75% of their work using ABW. Someone who is logged on to ABW all day but doesn't use it much wouldn't count.

Users who are expected to use the system, but to do so for less than 75% of their work can be combined to arrive at a virtual count. For example, if three users each perform about 25% of their work using ABW, you can count them as a single user for the purposes of this document.

Note that it is important to size the hardware to handle the busiest load times, considering that some parts of the day may be busier than others. It might be useful to estimate active concurrent users during different parts of the work day (say, in two hour blocks) and use the highest estimate when sizing your hardware.

For example, it may be that several plant supervisors spend the first couple of hours each day entering data into and running reports from ABW, and the rest of the day primarily on the shop floor. Since these supervisors spend at least 75% of their time on ABW for the first two hours of the day, you'd want to count them as full users during that period.

One Server or More?

ABW utilizes three main Microsoft services: 1) Internet Information Service (IIS), 2) SQL Server, and 3) Reporting Services (an optional component of SQL Server). For smaller installations, all three of these services are typically run on a single server.

For larger installations, it is common to spread these services across two or three separate machines. The most common separation pattern is to host the IIS portion on a relatively smaller

machine (possibly along with other intranet web sites) and run SQL Server and Reporting Services together on another, more powerful, server.

Minimum Hardware Recommendations

For simplicity, the following recommendations are split into three installation sizes — up to 15 users, 10–50 users, and 30–100 users. The overlap is intentional — usage patterns vary and user count is an imprecise proxy for resource requirements, at best. In one installation, 50 users might work just fine on a system that meets the “Medium” specifications below, whereas another installation with more intensive usage patterns may require a more powerful server to support just 30 users.

For installations larger than 100 users, or if you believe your usage and data requirements to be sufficiently “out of the ordinary” that you fear these recommendations may not fit your situation, please contact Info-Power to schedule a more in-depth discussion.

These are minimum recommendations. Oftentimes, significantly faster hardware can be had for not much more money. Be sure to invest in quality before speed, however — a good, solid server that just meets requirements is better than a blazingly fast system that is not reliable.

Small (up to 15 users)

- Two CPU cores
- 3GB RAM
- 80GB disk space for data (not counting operating system needs)
 - 7200 RPM SATA drives
 - Operating system and database files on separate disks
- 10Mb network (100Mb preferred)

Medium (10 - 50 users)

- Four CPU cores
- 4GB RAM
- 120GB disk space for data (not counting operating system needs)
 - 10,000 RPM SATA drives
 - Separate disks for
 - Operating system
 - SQL Server Data files
 - SQL Server Log files
- 100Mb network

Large (30 - 100 users)

- Eight CPU cores
- 8GB RAM (use a 64-bit operating system)
- 300GB disk space for data (not counting operating system needs)
 - Hardware RAID
 - Battery-backed cache with write caching enabled
 - SQL Server Log files on RAID 10 array
 - SQL Server Database files on RAID 5 or RAID 10 array
 - SQL Server temp db on RAID 0 or RAID 10 array
- 100Mb network (1000Mb (1Gb) preferred)

Software Recommendations

Microsoft Windows Server 2003 or later

To utilize more than 4GB RAM, a 64-bit server is recommended.

Microsoft SQL Server 2008 R2

There are three different versions of SQL Server that might apply.

The **Standard Edition** of SQL Server would work for any ABW installation. This edition will utilize up to 4 physical CPUs, 64GB RAM, and supports up to 524PB maximum database size.

The **Workgroup Edition** might work for small or medium installations. Compared to Standard Edition, the Workgroup Edition is limited to 2 physical CPUs and will only utilize up to 4GB RAM.

The **Express Edition** is free from Microsoft, and might work for small installations. It is limited to 1 physical CPU and will utilize only 1GB of RAM. Also, databases are limited to 10GB in size.

CPU and CPU Core Counts

Note: The CPU limitations of the SQL Server editions are based on physical CPUs. This is a different number than used in the hardware recommendations above, which are based on CPU **cores**. A server containing a single, quad-core CPU has four CPU cores (meeting the CPU requirement for up to 50 ABW users), but only counts as a single CPU as far as SQL Server is concerned. In this case, the Express edition should utilize all four CPU cores since they are contained in a single physical CPU chip.

Virtualization

We do not have enough experience with production ABW installations running on a virtual server to make specific recommendations for this environment. Microsoft has published guidelines on their web site for configuring SQL Server on a virtual machine. Please check those guidelines before proceeding with this approach.