Top Five Secrets to Maximizing Your JDA WMS Performance

LONGBOW ADVANTAGE

Discover five optimization secrets that will lead to a significantly faster and more responsive warehouse management system.

Your JDA warehouse management system is the engine that drives your warehouse operations. Tuning it for maximum performance will deliver more speed, accuracy, efficiency—and profits. A finely tuned WMS also means a more productive warehouse staff, and a higher level of service for your organization's customers. Given these substantial benefits, what are some of the approaches you can take to optimize your WMS's performance?

This brief will look at five key areas, which, if handled properly, will lead to a significantly faster and more responsive warehouse management system.

1. Database maintenance

Database issues can seriously slow down your system. The secret to avoiding problems in this area is to ensure that your database is properly maintained. There are a number of steps involved:

1. Build database indexes on a regular basis—the optimal time frame will depend on the specifics of your operation, but as a general rule, it should be done weekly
2. Keep database statistics up to date, ideally on a daily basis
3. Configure database parameters correctly
4. Perform archiving regularly to minimize database size
5. Reduce network latency between the database and application server by maximizing the bandwidth of the connection between them

Proper database maintenance will go a long way toward ensuring that your WMS performs at maximum efficiency. In fact, this is the area that can have the biggest impact of all.

2. Multi-threading

Multi-threading is a programming approach that allows more than one thread to run within a single process. By running multiple threads independently in parallel, process execution is significantly speeded up. The increase in speed is equal to the number of threads. For example, a 4-threaded process is almost 4 times faster than one that is single threaded, and so on.

How can you take advantage of the speed and efficiency of multi-threading in your JDA WMS? If you are running JDA WMS 2012, you can employ multi-threading to speed up allocation, archiving, and integrator tasks without having to modify the code. The multi-threading capability is built right into the system; all that is required is that you configure it properly. For older JDA WMS versions, some code modifications are required. But the reward is a much quicker execution of key WMS processes—some of which may otherwise take extended periods of time to run.

3. Database size

A smaller database is a faster database. Keeping your database as lean as possible will help keep your WMS running at peak performance. The key is determining the right archive configuration, one that sets an optimal data retention period. The proper value will depend on your specific warehouse operation, volume of data, and the type of reporting capabilities you have. But in all cases, the aim is to set the retention period so that your WMS contains only the data you absolutely require.

As JDA points out, your WMS was not designed to be a data warehouse, and should not be used as one. The best approach is to keep only current data on your main system, and archive the rest.

4. SQL Queries

If a process or execution is slow, the underlying cause is often the database queries associated with it. To identify suspect SQL queries, create a trace file of the process and examine the code structure query by query. Those that are poorly written should be optimized. There are many ways to structure a query to obtain the same result, but some are much faster than others. This can make a dramatic difference in performance. Optimized SQL queries can reduce process execution time by a factor of 70 or more—for example, from over 7 seconds to less than 100 milliseconds.

5. Network configuration

A properly configured network is essential to good WMS performance. You should test your network to ensure that is operating within specs. Ping time between client and server should be at an acceptable rate, and there should be no packet loss. You should also ensure that there is no extraneous traffic that is degrading network performance. A poorly configured or overloaded network will significantly compromise your WMS's performance.

All the techniques presented in this brief are key to optimizing your JDA WMS's performance. By applying them, your organization will enjoy the benefits of:

- faster, more responsive WMS
- increased warehouse efficiency and profitability
- enhanced customer service
- more productive warehouse staff

About Longbow Advantage:

Longbow Advantage is a leading supply chain consulting services firm with deep expertise in warehouse and labor management systems. We put a premium on customer experience, and we value the trust customers put in us to deliver the highest quality in the industry. Our customers are industry leaders who turn to us for our industry experience, faster implementation, and lower total project cost.

COMPANY HEADQUARTERS
LONGBOW ADVANTAGE INC.
5455 Avenue de Gaspé
Suite 335
Montreal, QC, H2T 3B3
Canada

CONTACT US FOR MORE DETAILS
info@longbowadvantage.com
www.longbowadvantage.com
1-888-904-4005

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