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Tectrade

Your Data Protection Partner

High Performance Spectrum Protect

How to boost the performance of
your Spectrum Protect solution

Your back-up window is closing

You invested in Spectrum Protect for a reason: to keep your business-critical data safe. But in the Age of Data when you're dealing with large volumes of data, that's not as simple as it sounds.

To complicate things further, this data is often drawn from a variety of sources. You also need to balance protecting your data with ensuring maximum user performance. All of which puts increasing pressure on your back-up window which probably hasn't expanded to anywhere near the same degree.

Data waits for no one

If you miss your back-up window today, your data will have changed by tomorrow. As a result, you may well have compromised your Recovery Time Objectives (RTOs) and Recovery Point Objectives (RPOs), potentially putting your whole business in danger.

The thing is, Spectrum Protect should never be a performance bottleneck if:

1. Your business can access/read the data from where it is stored quickly enough
2. The data can be sent to the Spectrum Protect server fast enough
3. The Spectrum Protect server can write the data to where the back-up data is being stored, in the timeframe allowed

Focus on performance

If these three steps take place seamlessly then Spectrum Protect should deliver a high performance back-up solution you can bet the future of your business on. If this isn't the case, then you need to examine each of these elements to identify areas for potential improvement.

In this short guide, we're going to help you with this process, looking at the key areas you should focus on if your Spectrum Protect solution is under-performing.

Introducing the usual suspects

Every business and every Spectrum Protect solution is, to some extent, unique. But we still encounter common areas for improvement when we work with new clients.

Some of these areas relate to the way Spectrum Protect is configured. Others have more to do with how back-ups are carried out and the workflows that underpin them. When we are looking for potential problems, our line-up looks something like this:

1. Firstly, we look at the bottlenecks in the daily back-up cycle. Here we look at what's taking the most time - whether it's throughput, scheduling or offsite copying
2. Secondly, we identify the areas taking more time than they should
3. Thirdly, we look at external factors like firewall performance and internet links. We look for old, over-worked servers or old operating systems such as NetWare, and how we can back these up more efficiently
4. Fourthly, we look to see whether optimum workflows are in place for non-Spectrum Protect workloads, server hardware, operating systems, storage devices, network configurations, utilisation and reliability

Improving housekeeping processes

A key area of Spectrum Protect underperformance may be down to the foundational processes your company is following when managing back-ups. This usually comes down to the way you manage the scripts Spectrum Protect works through during housekeeping. The common reason we find for this is that companies haven't kept up with the pace of change. They find that suddenly the way they've always done it is no longer fit for purpose in the new Age of Data.

All too often businesses will only reassess their Spectrum Protect scripts when a significant change event is occurring, like a server hardware refresh or a merger/acquisition. Unfortunately, by ignoring their scripts, they miss small changes which could have a big impact on their Spectrum Protect performance. For example, by looking closely at your Spectrum Protect scripts you may find:

- Where scripts have run sequentially in the past they may now run in parallel, saving you huge amounts of time
- Running them in a different order saves both time and effort
- You're able to unlock better utilisation by running some scripts for slightly longer

This is an area where the answers often aren't always obvious and you need both the experience and the expertise to identify the possibilities.

It's an area we have a great deal of expertise in. (At the risk of a shameless plug, it's what our Spectrum Protect Healthcheck Service focuses on, delivering a tailor-made prescription for better back-up performance.)

10 ways to extract great everyday performance

Up to this point we've touched on the broad core areas you can address to improve your back-up performance, but here are 10 ways to go even further to extract every ounce of performance you can:

1. You can spread the load and optimise the Spectrum Protect server database by using multiple volumes to deliver greater I/O capacity with parallel processes to reduce I/O contention. The recommended number of Spectrum Protect server database volumes is between 4 and 16, although this can vary depending on the environment.
2. You can use collocation to reduce mount and locate times for tape and help better organise your data - this will help accelerate performance (though may require more storage volumes).
3. You can use compression within the Spectrum Protect client to transmit less data to the Spectrum Protect server and reduce the required storage space (though this will place increased demands on client processors so may not be appropriate for older equipment or heavily utilised servers).
4. You can use journal-based incremental back-ups to avoid having to scan the client file system. This can significantly speed up the time it takes to perform incremental back-ups and uses far less virtual memory. Spectrum Protect for Virtual Environments can now do incremental forever on VMware and Hyper-V backups. Snapdiff can also replace NDMP on Netapp filers by utilising snapshot technology to perform incremental backups of larger files.
5. You can run back-ups in multiple parallel sessions which can achieve substantially better throughput in many cases.

10 ways to extract great everyday performance

6. You can use image back-up to avoid file system overheads.
7. You can optimise performance by configuring your system to control the amount of interaction that is required and information that is displayed during a back-up or restore session.
8. You can reduce resource contention and improve performances by scheduling Spectrum Protect operations like client back-up, storage pool back-up, storage pool migration, database back-up, inventory expiration and reclamation at different times.
9. Spectrum Protect performance is very dependent on your network configuration, so it's also advisable to ensure your network options for Spectrum Protect performances are set correctly.
10. And finally, store and back-up no more than you have to – if you have to copy less to Spectrum Protect and store less with Spectrum Protect, then you have less data to move around and this can free up the breathing space and time you need to get your system running more efficiently.

Some of these approaches may work for you, others may not. Ultimately, it's all about assessing them on a case-by-case basis as you may require some or all of these techniques to resolve the issues you're experiencing.



Don't get left behind

The latest versions of Spectrum Protect offer a wide range of performance improvements. So, if you're on earlier versions like 6.x and particularly 5.x, it's a good idea to examine whether an upgrade could simply deliver the levels of performance you require.

Better performance for today's world

The latest version of Spectrum Protect can deal with more than 4 billion objects within the database, (compared to 2 billion in version 6.2, 1 billion in version 6.1 and 0.5 billion in version 5.5). It is also better suited to the rapidly growing environments that are becoming the norm in the Age of Data:

- You will see fewer bottlenecks and better overall performance as the core database has been rewritten to deal with greater volumes of data
 - You'll be able to support the latest operating systems and virtual environments
- IBM has demonstrated a 10x improvement in Spectrum Protect-based deduplication in recent versions, allowing you to significantly reduce the amount of data you have to deal with in any back-up window
 - The good news is with the right support, upgrading your Spectrum Protect version can be a straightforward, seamless operation with no downtime and it can unlock a wide range of new benefits and the performance you're looking for.

Book your Spectrum Protect Healthcheck

If you're not sure whether you're getting the best performance from your Spectrum Protect solution, our Spectrum Protect Healthcheck service will audit how well your current system is performing and identify key areas for improvement.

This independent review of your environment fulfils two core roles. In a seemingly healthy environment it aims to minimise the potential risk of a future service failure and/or data loss. Alternatively, where a well-defined service issue is known but cannot be solved by resident IT staff, this is the initial phase in any problem resolution.

[Find out more](#)



We will take personal responsibility for ensuring you achieve your data goals

The current explosion in volume, velocity and variety of data has left many organisations battling to realise data's value, and minimise its cost.

Tectrade works with complex organisations, with ambitious aims and modern data requirements. It's complicated, demanding work. But it's work we love.

However great your data challenge, we will never walk away. It's simply not in our

character. We relish tackling new problems, and positively thrive on delivering the almost-impossible.

Tectrade provides global expertise in data management. With international operations, over 20 years of experience and 50+ technical specialists, Tectrade has helped hundreds of clients to gain comprehensive control of their data, and manage it effectively as their organisation grows.

At Tectrade, we live and breathe data. It's in our DNA. And we're relentless in finding the solution that's right for your business. With teams in Europe, and the US, we can deliver projects and managed services on a truly global scale.

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