Business Internet Speed & Performance Guide

Understand business bandwidth, test methodology, interpret results, diagnose bottlenecks, and optimise your connection for peak performance.

6 KEY TOPICS	**15+** OPTIMISATION TIPS	**Guide** SPEED TEST METHODS	**Free** DOWNLOAD NO STRINGS

About This Guide

This guide provides practical, actionable advice for UK businesses. Work through each section to build a comprehensive understanding of the topic. Use the information to make informed decisions and implement best practices.

Need Help With Your IT?
Our team can help you implement the recommendations in this resource.

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1 Understanding Business Bandwidth

Bandwidth is not just about headline speeds. Understanding how it works helps you make better decisions.

Internet bandwidth is the **maximum rate of data transfer** across your connection, measured in megabits per second (Mbps) or gigabits per second (Gbps). But headline speed is only part of the picture. Your actual experience depends on **bandwidth, latency, jitter, packet loss, and contention**.

Download vs Upload Speed

Most broadband connections are **asymmetric** — download speeds are much higher than upload. This was fine when businesses primarily consumed content, but modern cloud-dependent workplaces often need strong upload speeds for **video conferencing, cloud backup, VoIP, and uploading files to SharePoint or OneDrive**. If your team constantly uploads large files or runs frequent video calls, asymmetric bandwidth may be your hidden bottleneck.

Contention Ratios

Broadband connections share bandwidth with other users in your area. A **contention ratio of 50:1** means up to 50 premises share the same bandwidth allocation at the exchange or cabinet. During peak hours (typically 12pm–2pm and 4pm–7pm), this sharing causes speed reductions. Leased lines have a **1:1 contention ratio** — the bandwidth is exclusively yours, 24 hours a day.

How Much Bandwidth Do You Need?

As a rule of thumb, allocate **5–10 Mbps per user** for a typical office environment using cloud services, email, and web browsing. Add 2–4 Mbps per concurrent video call and 5–10 Mbps for cloud backup operations. A 50-person office with heavy cloud usage typically needs **200–500 Mbps download and 50–100 Mbps upload** as a minimum.

2 Speed Test Methodology

How you test matters as much as the results. Follow this methodology for accurate, meaningful measurements.

Casual speed tests from a WiFi-connected laptop produce unreliable results. Follow this **structured methodology** to get measurements that genuinely reflect your connection performance:

- ▶ **Test from a wired connection:** Connect a laptop directly to your router or switch via Ethernet. WiFi introduces variables (interference, distance, congestion) that mask the true connection speed.

- ▶ **Close all other applications:** Ensure no background downloads, cloud sync, or streaming is consuming bandwidth during the test on the test device.

- ▶ **Test at multiple times:** Run tests at 9am, 12pm, 3pm, and 5pm over several days to capture peak and off-peak performance variations.

- ▶ **Use multiple test servers:** Test to your ISP's server (best-case), a UK server (typical), and a European server (worst-case realistic) to understand latency across different destinations.

- ▶ **Measure all four metrics:** Download speed, upload speed, latency (ping), and jitter. All four matter for business applications, especially VoIP and video.

- ▶ **Use business-grade test tools:** Beyond speedtest.net, use tools like **iPerf3** (for raw throughput), **PingPlotter** (for latency and route analysis), and your ISP's own test tool for SLA-relevant measurements.

- ▶ **Test under load:** Run a speed test while the office is at normal capacity to measure real-world performance, not just theoretical maximums on an idle circuit.

> **Tip: Automate Testing**
> Tools like PRTG, ThousandEyes, or even a Raspberry Pi running scheduled speedtest-cli can automate regular testing and build a historical performance profile. This data is invaluable when negotiating with your ISP or justifying an upgrade.

3 Interpreting Your Results

Raw numbers are meaningless without context. Here is how to assess whether your results indicate a problem.

Compare your test results against these **business-grade benchmarks** to determine whether your connection is performing adequately:

METRIC	GOOD	ACCEPTABLE	POOR
Download speed vs contracted	90%+ of contracted	70–90% of contracted	Below 70% of contracted
Upload speed vs contracted	90%+ of contracted	70–90% of contracted	Below 70% of contracted
Latency (to UK servers)	Under 15ms	15–40ms	Over 40ms
Jitter	Under 10ms	10–30ms	Over 30ms
Packet loss	0%	0.1–0.5%	Over 0.5%

If your download speed consistently falls below 70% of your contracted speed, you have grounds to **raise a fault with your ISP** and potentially claim against the SLA. For VoIP and video conferencing, **jitter and packet loss** are more important than raw speed — a 100 Mbps connection with 2% packet loss will deliver worse call quality than a 20 Mbps connection with zero packet loss.

> **When to Escalate**
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> If your ISP cannot resolve persistent speed issues within their SLA repair window, escalate formally in writing. Reference your contract terms and request service credits. If issues persist beyond 30 days, consider invoking the early termination clause for persistent service failure.

4 Common Performance Bottlenecks

When speeds are poor, the issue is not always the ISP. These internal factors frequently cause performance problems.

Before blaming your ISP, investigate these **common internal bottlenecks** that can throttle your internet performance regardless of the circuit speed:

- ▶ **Ageing router or firewall:** Your firewall's throughput capacity must exceed your circuit speed when all security features (IPS, content filtering, SSL inspection) are enabled. A firewall rated at 500 Mbps may only deliver 150 Mbps with full UTM features active.
- ▶ **Network switch bottleneck:** Ensure switches connecting to the router are Gigabit or 10 Gigabit. A single 100 Mbps switch in the path will cap everything behind it regardless of your internet speed.
- ▶ **WiFi congestion:** Overcrowded WiFi channels, insufficient access points, or legacy 2.4 GHz-only devices can make a fast internet connection feel slow. Always test from a wired connection first to isolate WiFi issues.
- ▶ **Cloud backup or sync consuming bandwidth:** OneDrive, SharePoint sync, cloud backup jobs, and Windows Update can saturate an upload connection. Schedule heavy transfers outside business hours and implement QoS policies.
- ▶ **DNS resolution delays:** Slow DNS servers add latency to every web request. Switch to fast public DNS (Cloudflare 1.1.1.1 or Google 8.8.8.8) or deploy a local caching DNS server.
- ▶ **Malware or compromised devices:** Cryptominers, botnets, or compromised IoT devices can consume significant bandwidth without obvious symptoms. Monitor for unusual traffic patterns.
- ▶ **Inadequate QoS configuration:** Without Quality of Service policies, a single large file download can starve VoIP and video traffic of the bandwidth they need. Prioritise real-time traffic at the firewall level.

5 Optimisation Techniques

Practical steps to get the most from your existing internet connection before committing to an expensive upgrade.

These optimisations can **significantly improve perceived performance** without changing your internet circuit. Implement them in order of impact:

- ▶ **Implement QoS policies:** Configure your firewall to prioritise VoIP (SIP/RTP) and video conferencing traffic above all other traffic. This alone can transform call quality on congested connections.
- ▶ **Schedule bandwidth-heavy tasks:** Move cloud backup, Windows Update, and large file sync operations to outside business hours using group policy or scheduling tools.
- ▶ **Enable bandwidth limits per user or application:** Prevent a single user downloading a large file from saturating the entire connection for everyone else.
- ▶ **Deploy split-tunnel VPN:** If remote workers connect via VPN, configure split tunnelling so only business traffic traverses the VPN. Internet browsing and streaming should go directly to the internet.
- ▶ **Optimise DNS:** Deploy a local DNS caching server or configure fast public DNS resolvers to reduce the latency added by DNS lookups on every web request.
- ▶ **Review and clean up cloud sync:** Audit OneDrive and SharePoint sync configurations. Users syncing entire libraries of files they rarely access consume upload bandwidth unnecessarily.
- ▶ **Upgrade your firewall if it is the bottleneck:** If your firewall's UTM throughput is lower than your circuit speed, you are paying for bandwidth you cannot use. Upgrade the appliance or offload some security functions to cloud-based services.

> **Quick Win: Bandwidth Monitoring**
> Install a bandwidth monitoring tool (PRTG, ntopng, or GlassWire) to identify exactly which devices and applications are consuming the most bandwidth. Often a single device or service is responsible for the majority of congestion.

6 When to Upgrade Your Connection

How to determine when optimisation is no longer enough and a circuit upgrade is genuinely required.

After implementing the optimisations above, if you still experience performance issues, it may be time to upgrade. Use these **decision triggers** to justify the investment:

▶ **Sustained utilisation above 70%:** If your connection is consistently above 70% capacity during business hours after optimisation, you are approaching saturation and performance will degrade during peaks.

▶ **VoIP quality issues persist after QoS:** If call quality problems continue despite properly configured QoS, insufficient raw bandwidth is the likely cause. VoIP requires guaranteed bandwidth that QoS alone cannot create on a saturated connection.

▶ **Cloud migration is planned:** Moving servers or applications to Azure, AWS, or other cloud platforms significantly increases both upload and download requirements. Model the bandwidth impact before migrating.

▶ **Headcount growth:** Each additional user adds 5–10 Mbps of demand. If you are hiring significantly, proactively upgrade before performance degrades rather than reacting to complaints.

▶ **Video conferencing is now the norm:** Post-pandemic, most businesses run multiple concurrent video calls. Each HD video call requires 3–5 Mbps both ways. Twenty concurrent calls need 60–100 Mbps of upload bandwidth alone.

▶ **ISP cannot meet SLA consistently:** If your current connection type fundamentally cannot deliver the reliability you need (e.g., FTTC with chronic congestion), upgrading to FTTP or a leased line is the solution.

When making the business case for an upgrade, **quantify the cost of poor performance**: lost productivity, failed video calls, customer complaints, and staff frustration all have real costs that typically dwarf the price difference between connection types.