# Wide Area Network (WAN) Connectivity Plan

### **Overview**

The need for fast, secure, and reliable communication within a business’s essential locations has never been greater than it is now given the globalized digital world we live in. This WAN Connectivity Plan provides optimum availability, resilience, and performance for all vital areas, including, the Head Office, Data Centre 1, Data Centre 2 and a representative branch office, Your Site.

To guarantee every site remains functional and operational even in the event of a network failure, we provide three types of connectivity per location, as follows:

- Dual high-speed ISP connections (fibre and/or microwave) with diverse paths in order to ensure redundancy.

- One mobile 4G/5G backup connection as a fail-safe in the case both fixed-line options go down.

The current market's availability, quality of service (QoS), and service-level agreements (SLAs) criteria all shape our choice for services. The objective is to trim the operational costs while maximizing the inter-site connectivity operational security, minimizing the downtime, and ensuring the throughput.

### **Head Office**

* Primary Fibre: Eir will implement a 1 Gbps symmetrical fibre connection that provides primary and secondary VoIP aid alongside dual QSIP monitoring choke VoIP sub-systems, databases, email, and file-sharing action. With prompt SLAs and substantial metro fibre coverage, Eir puts the monthly cost at €500 with an installation fee of €1,200. Throughput from Eir will cover business-critical traffic.
* Secondary Fibre: SIRO, in partnership with Vodafone Business, will provide the first layer of redundancy with a 1Gbps secondary plurality. SIRO estimates the monthly charging at €450 alongside an installation fee of €1,000. Motivation of continuous operation in case of primary line disablement is provided.
* 5G Backup: The final fallback will be sorted by a Three 5G business router which has comparatively lower speed but meets vital minimum bandwidth reliability during an outage. Essential service outage traffic is leveled through auxiliary internet services. Monthly estimates standalone at €70.

### **Data Center 1**

* Primary Fibre: Enet will provide the Best Primary throughput with a 10 Gbps high-capacity fibre with €900 monthly charges making it ideal as next best alternative for high volume traffic in data centre backups, replication or inter-site services. Serviced metro Enet zone have premium SLAs. The estimate for setup is set at € 2,500.
* Secondary Microwave: AirSpeed Telecom's (500 Mbps) microwave link works as a fibre substitute; particularly where physical redundancy is required. This prevents shared ducts or underground fibre routes. The costs incurred include €2,000 as the set up cost and a recurring fee of €600 every month.
* 4G Backup: A Vodafone LTE router will act as the tertiary back up solution. While not designed for data heavy usage, this does aid in accessing remote management and monitoring tools during outages due to fibre failure. Expected expenses are roughly €40 per month and no initialize fee.

### **Data Centre 2**

* Primary Fibre: BT Ireland services sustain a 1 Gbps fibre connection with competitive business pricing as well as strict SLAs. They charge around €550 every month with an install fee of €1,500 once off. This will serve as the primary route for inter-DC and outbound cloud communications.
* Secondary Microwave: Ripplecom will provide a 300 Mbps microwave link as a standby and to achieve service redundancy. This will also allow to share the load, retain site uptime during outages, and aid with fibre cut scenarios. Set up costs are estimated at €1.800 with a reimbursement of €400 every month.
* 5G Backup: This backup estimate is likely to cost €60 every month. Eir's 5G services will provide ample support enabling crucial system access to be maintained in case both primary links fail.

### **Your Site**

* Primary Fibre – Virgin Media Business offers a 1 Gbps down / 100 Mbps up connection for roughly €400 a month with an installation fee of €1,000. This is perfect for a branch office utilizing cloud-based applications, file syncs, and remote desktops.
* Secondary Fibre – The National Broadband Ireland (NBI) rollout brings 500 Mbps symmetrical fibre to the less-served or rural regions, making this a great option for secondary connectivity at an affordable price. 350 euro monthly. 500 euro installation.
* 4G Backup - Powered by a basic Three 4G router, this emergency backup is low-cost. During a fixed-line outage, the router remote access during outages. €30/month.

## **Estimated Monthly Costs (All Sites)**

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| Location | Estimated Monthly Total |
| Head Office | €1,020 |
| Data Center 1 | €1,540 |
| Data Center 2 | €1,010 |
| Your Site | €780 |
| Total | €4,350/month |

### **Final Remarks**

This connectivity strategy focuses on business continuity, sustained high performance, and future needs. All locations receive 2 enterprise-class primary connections, mobile failover, and backup on the cloud to mitigate downtime due to unpredicted failures. Operations using FortiGate firewalls with SD-WAN capabilities will have traffic auto reroute in the event of failure, thus providing uninterrupted workflows without the need for manual oversight.

All proposed solutions from Fortinet are aligned to the goals of cost optimization, sufficiency, and scalability. This method will address today’s needs while enabling increased capacity in the future, whether through additional bandwidth or enhanced inter-site VPN connections.