

Proposed LAN/WLAN Network Infrastructure for the New Office.

Office Address

* Via della Libertà, 23, 56025 Pontedera (PI), Italy

Provider Selection and Annual Cost Estimation.

- **TIM (Telecom Italia):** Offers FTTH connectivity with speeds of up to 1 Gbps download and 300 Mbps upload.

Estimated cost: about €1,200-1,500/year for a business plan.

- **Fastweb:** Available with FTTH connectivity up to 2.5 Gbps download. Estimated cost: about €1,500-1,800/year.

Rationale: FTTH connection provides high bandwidth and low latency, which is essential for an office with 30 devices on LAN and WLAN, and supports high-quality video calls in the meeting room.

In fact FTTH (Fiber to the Home) is preferred to ensure high performance, especially for video-conferencing applications, heavy file-sharing, and use of cloud applications from multiple devices.

Network Diagram and Hardware Components

LAN Network

- Router: Cisco ISR4321, for excellent security and traffic management.
 - Firewall: Cisco ASA5506-X , Perfect for our Office context.
 - Switch: Cisco Catalyst 2960-24TT
 - Access Point: Cisco Meraki MR36, to cover the area of 300m² with reliable coverage and ability to handle high network traffic.
 - Patch Panel and Cat 6a cabling for fast LAN connectivity (10 Gbps).
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LAN Connected Devices

- Desktop Computers and Printers: Fixed workstations for greater stability and speed; connected via LAN for employees in the three main offices.
- Meeting Room: LAN connection for video-conferencing system and AV (AudioVideo) devices for stability in communication.

WLAN Network

The WI-Fi network will be divided into two WLANs:

- Enterprise VLAN: Access to internal servers and enterprise resources.
- Guest VLAN: Internet access only, isolated from the main network for security.

Office Layout and Distribution of Access Points.

Office Admin: Connected to a direct LAN for stability.

Office A & Office B: Configured with Desktops connected to LAN; two centrally located Wi-Fi access points for mobile devices.

Office C: Configured with Desktops connected to the LAN; a centrally located Wi-Fi access point for mobile devices.

Relaxation Room: Dedicated Wi-Fi access point for Internet access.

Printer Room (etc): Dedicated LAN for printer.

Meeting room: Razer video conferencing system with 4k display, soundbar and USB microphone; LAN connection for stability

Network Room: Centralized server and network infrastructure; switches and routers connected here for centralized management. Implement Good Ventilation and Physical Security in this room.

Conference Room Hardware

- Videoconferencing: Razer Kiyo Pro system with high-resolution camera and built-in sound system.
- Display: 65" Smart TV with HDMI connectivity
- Audio: JBL Professional soundbar, USB microphone for clear audio.
- AV control: Logitech Tap system for centralized control of video conferencing and presentations.

