tripleten

Redesigned Network Diagram

0x2A Security

Client: Tempus Fugit Timepieces

CS Sprint 1 | Final Project

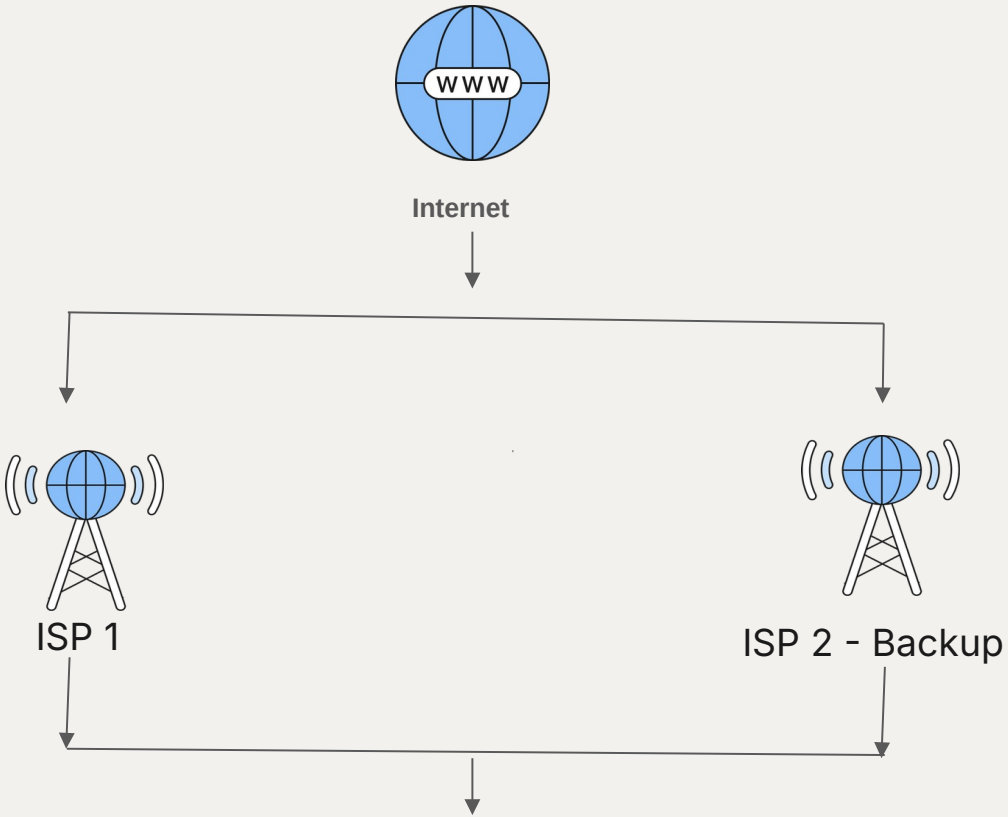
by Carolina H. Pinto

tripleten

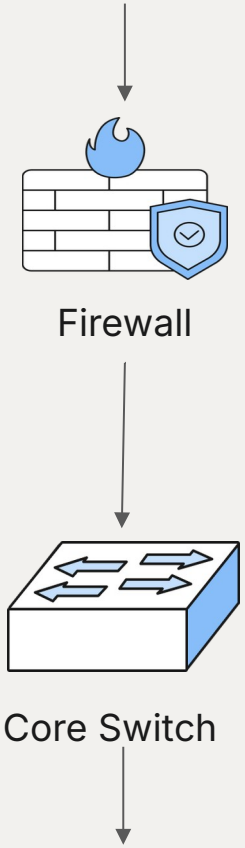
Modernized Network Infrastructure

The redesigned network replaces the legacy ring topology with a hybrid star topology to improve availability, simplify management, and support modern security and remote access requirements.

Internet Access

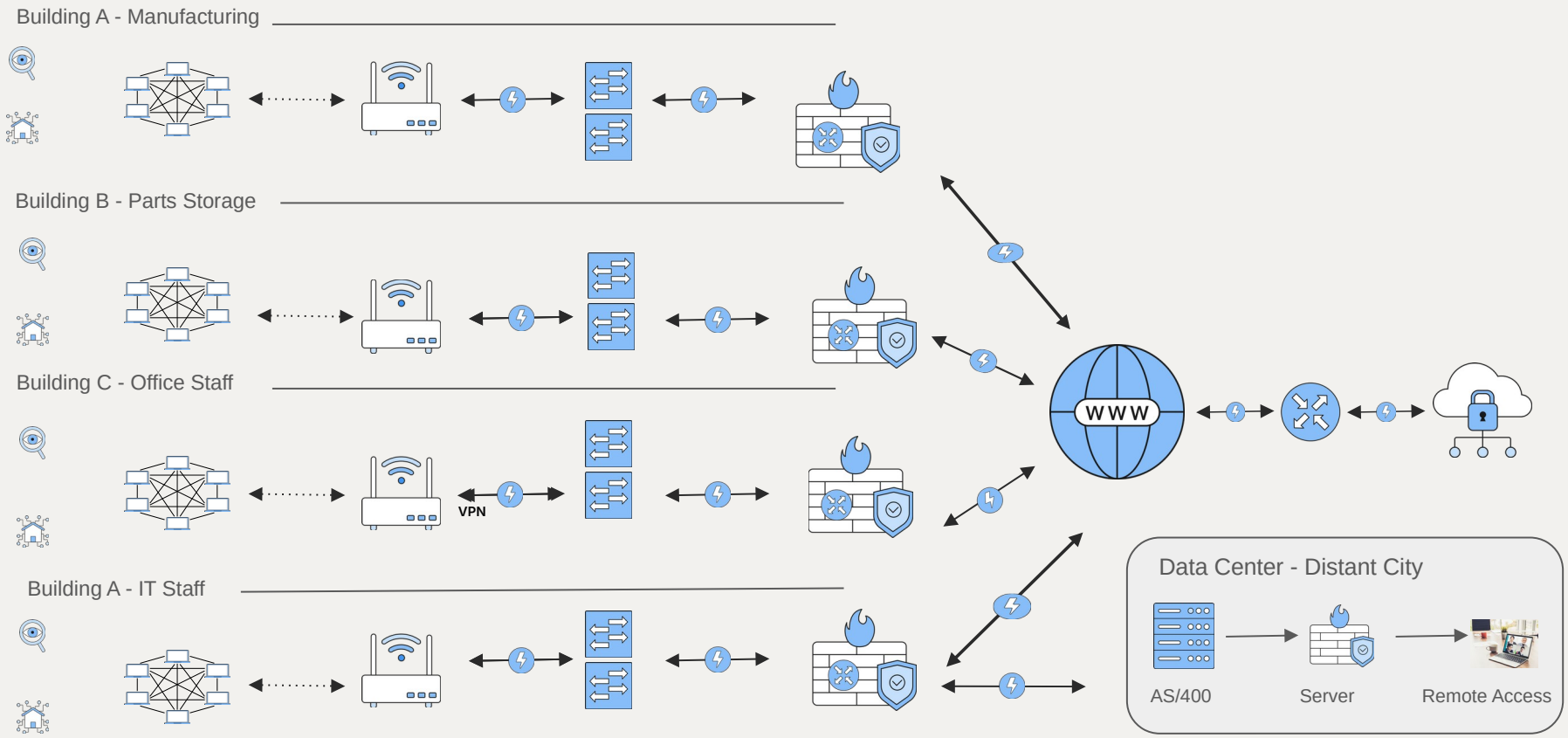


Security + Core



tripleten

Company Buildings Diagram



tripleten

Redesigned Network Documentation

0x2A Security

Client: Tempus Fugit Timepieces

CS Sprint 1 | Final Project

by Carolina H. Pinto

tripleten

Overview of Network Redesign

The Tempus Fugit network was redesigned to modernize infrastructure, improve reliability, and support business growth while respecting the company's legacy AS/400 system and operational constraints. The new design improves confidentiality, integrity, and availability (CIA) and enables faster internet access, remote work, and better visibility into network health.

1) Dual Internet Service Providers (ISPs)

What changed:
Replaced the single ISP connection with two ISPs connected to a central firewall.

Why (CIA):

- **Availability: Prevents total internet outages if one ISP fails**
- **Integrity: Reduces disruption caused by unstable connections**
- **Business need: Supports higher internet speeds for apps, social media, and mobile platforms**

tripleten

2) Central Firewall and Core Switch

What changed:
Added a centralized firewall and core switch to manage and protect all traffic between buildings, the internet, and the data center.

Why (CIA):

- **Confidentiality: Protects internal systems from unauthorized access**
- **Integrity: Controls and filters traffic entering and leaving the network**
- **Availability: Centralized design simplifies troubleshooting and recovery**

tripleten

3) Modern Router, Switches & Cabling

what changed:
Replaced outdated routers and damaged cabling in each building with modern networking equipment.

Why (CIA):

- **Availability: Reduces outages caused by failing hardware and cables**
- **Integrity: Improves network stability and data transmission reliability**
- **Business need: Supports modern devices and higher bandwidth requirements**

tripleten

4) Transition Away from Ring Topology

What changed:
Replaced legacy ring-based networking for end-user systems with a star-based design, while keeping the AS/400 isolated in the data center.

Why (CIA):

- **Availability: A single failure no longer impacts the entire network**
- **Integrity: Easier to isolate and resolve issues**
- **Constraint-aware: Legacy ERP system is preserved without limiting modernization**

5) Secure Remote Access (VPN)

What changed:
Added VPN access for employees and IT staff.

Why (CIA):

- **Confidentiality: Encrypts remote connections**
- **Integrity: Ensures only authorized users access company systems**
- **Business need: Enables remote work and remote troubleshooting, especially since the data center is in a distant city**

tripleten

6) Networkwork Monitoring and Alerts

What changed:
Added centralized network monitoring connected to the core infrastructure.

Why (CIA):

- **Availability: Detects outages and performance issues early**

- **Integrity: Helps identify abnormal network behavior**
- **Business need: Eliminates reliance on manual calls to detect failures**
- **Business need: Eliminates reliance on manual calls to detect failures**

tripleten

Thank you.