

Security Design

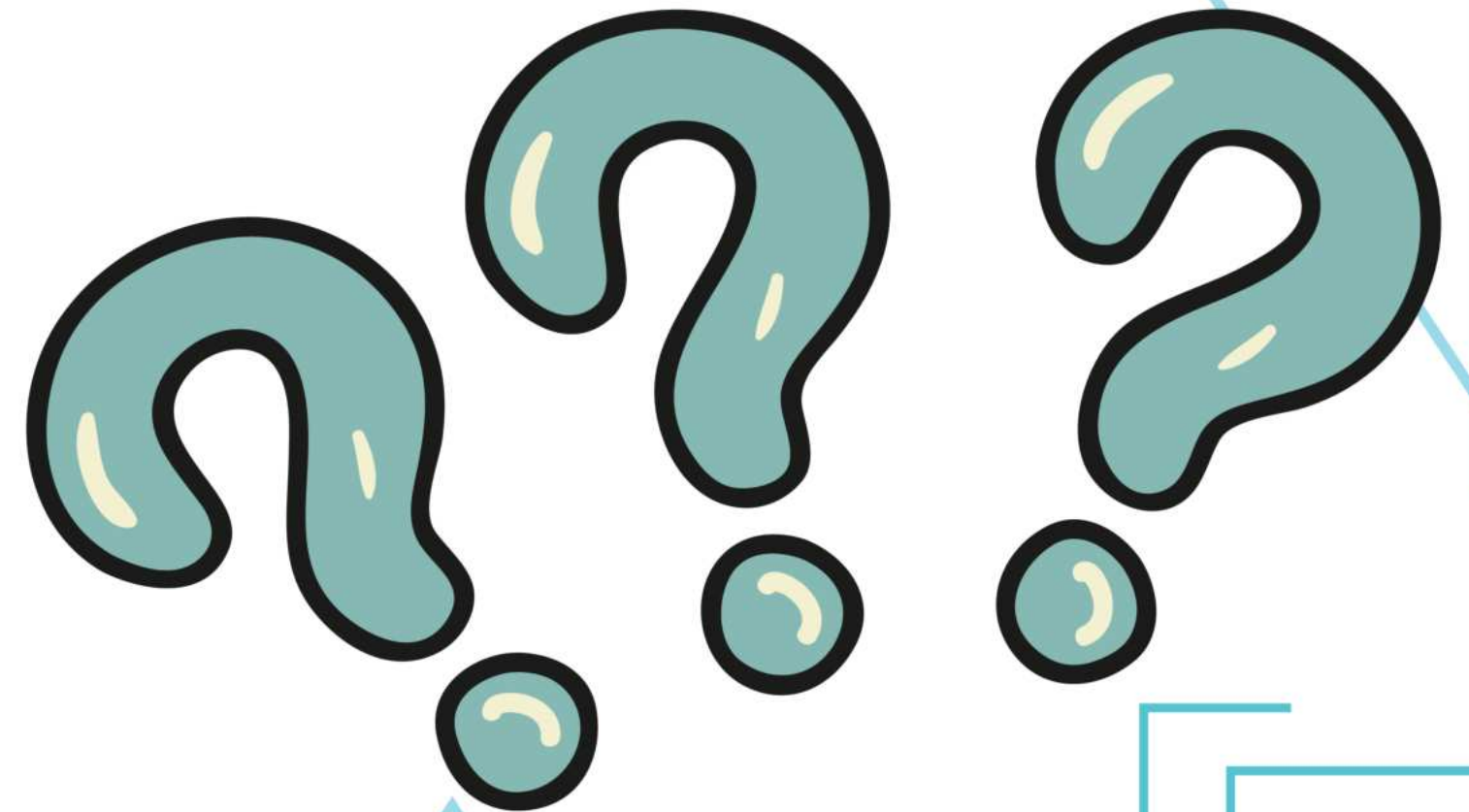
SECURITY DESIGN FOR IT BIZ SOLUTIONS 2025

By Manuel Perez

IT BIZ SOLUTIONS

Offers technological solutions and services to its clients in the areas of:

- IT Services (Soft & Hard)
- Cyber-security Services
- EMAIL Services
- Marketing Services
- Support & Training Services



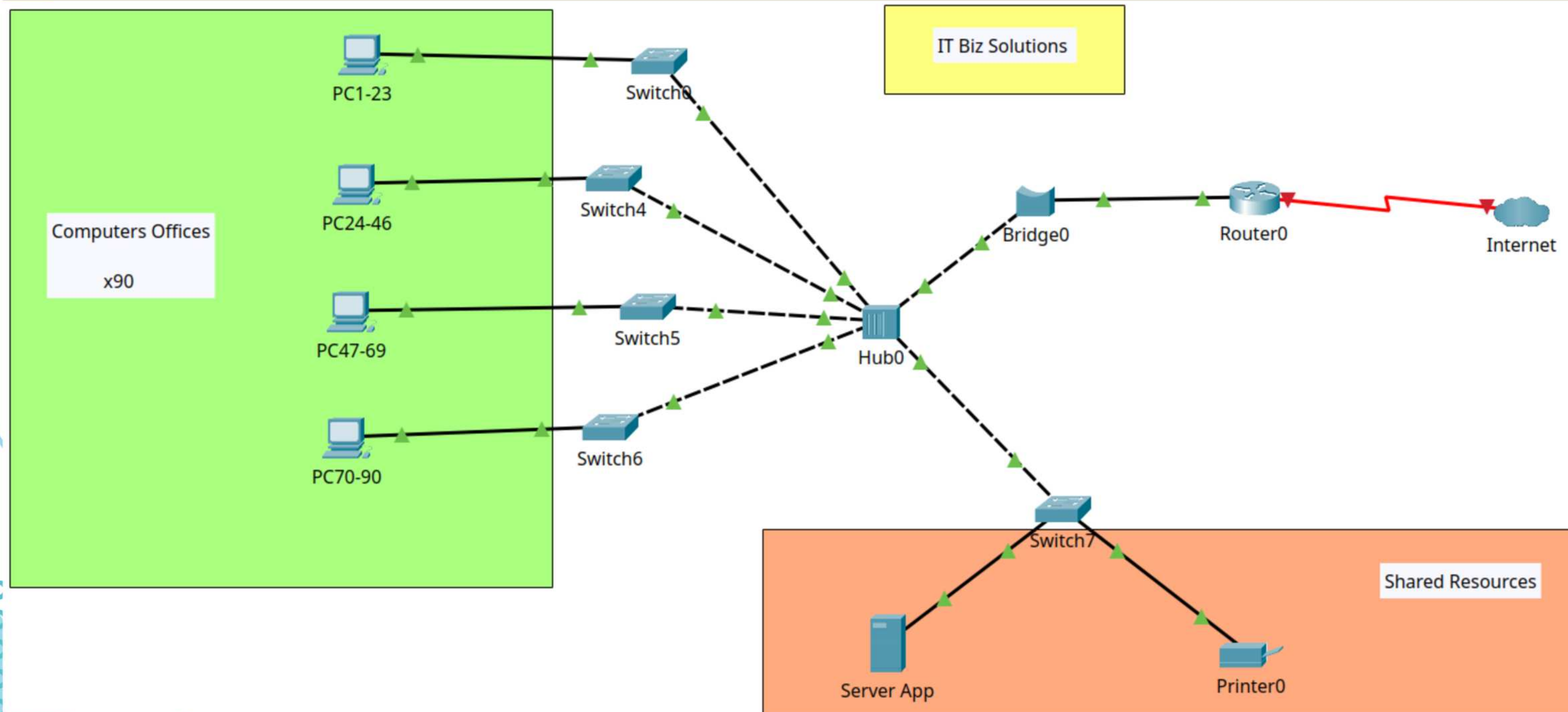
IT BIZ SOLUTIONS

IT Biz Solutions transforms information technology into business advantages

The company offers different services:

- Managed IT Services,
- Managed Continuity,
- Managed Workstations,
- Hardware Sales and Maintenance,
- Managed Email Service,
- Managed Security Services,
- Digital Marketing Services such as Website Design and Training

NETWORK DESIGN



NETWORK DESIGN

Network details

Type: LAN (Local Area Network)
Topology: Star

QUANTITY	TYPE
90	PC
5	Switch
1	Hub
1	Bridge
1	Router
1	IPS Connection
1	Server App
1	Printer

IDENTIFIED ISSUE

- Overload bandwidth
- poor segmentation
- lack of security against DDoS attacks
- shared server for applications and storage
- High network congestion in working hours.

WORK PLAN

- Evaluate current network
- Develop and implement solutions to optimise traffic flow
- Monitor the implemented changes and configurations
- Ensure network security
- Complaints

PLAN

PLANNED NETWORK STRATEGY

- Segment the network by creating VLANs.
- Implement Quality of Service (QoS) policies
- Re-design network
- Enhance network security

PLANNED DESIGN

1. Replace hubs and bridges with switches
2. Segment the network with VLANs
3. Balance the number of devices connected to the switches
4. Add at least one firewall
5. Add a backup server with disk in RAID

ADVANTAGES

- Unnecessary network traffic will be eliminated by reducing noise across all nodes
- Network security will be increased with segmentation

- Bandwidth will be used in the best way
- Policy Backup

IMPLEMENTATION

Methodology
PMBOK

INITIATING

Gathering
information:
objectives, risks,
needs, assets and
current policies

PLANNING

Individual work teams
Responsible for
planning the
integration

EXECUTING

The project will be
executed..
Align the company
with the objectives

CONTROL

Control and monitor
changes to maintain
quality standars

CLOSURE

Cessation of
activities and delivery
of the performance
report

TO START

SUMMARY ICT ASSETS

HUMAN RESOURCES

Human
Resources

HARDWARE

Hardware IT &
ICT resources

SERVICES

Training
resources &
Recognitions,
knowledge base

DATA

Data &
Information
Customers and
Providers

TALENT

Professional
talent

SOFTWARE

Human Resourc

THREAT MODELLING

Ransomware

Loss of critical
information

Outdated systems
No backup policy

Social Engineering Attacks

Credential theft
Financial fraud

Poor staff training
Password sec policy

DDoS Attack

Loss of services

Poor network
proteccion

**Based on international statistics,
the greatest risks for a company**

RISK MANAGEMENT PLAN

Ransomware

- Regular data backups
- Keep systems up to date
- Endpoint protection
- Regular training

Social Engineering Attacks

- Multi-factor authentication
- Regular training
- email filtering
- Policies for confidentiality information
- Verification procedures

DDoS Attacks

- Cloud-based traffic filtering
- Firewalls and intrusion prevention systems
- Scalable network infrastructure

GENERAL SECURITY POLICIES

General Legislation

Workplace Health and Safety Act 2011 code

Code of conduct

Telecommunications Code of Practice 2018

Code of conduct

Workplace Health and Safety Regulations
2021

Standard

Customer service standards



PROPOSED SECURITY POLICIES

Focused on identified risks

LEGISLATION

GDPR

NIST

CCPA

ISO/IEC 27001

STANDARDS

CIS Controls

PCI DSS

MITRE ATT&CK Framework

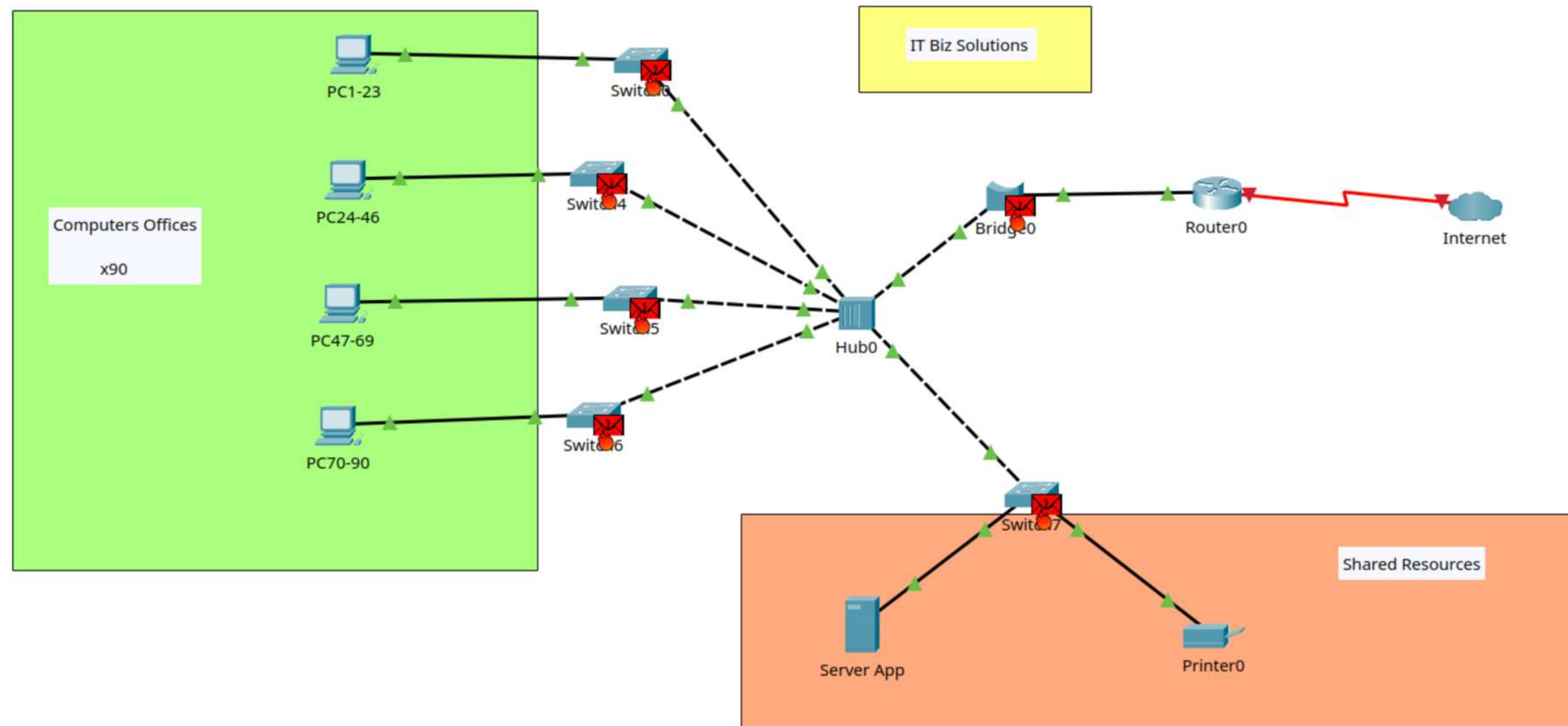
CODES OF CONDUCT

OECD Code of Good Practice

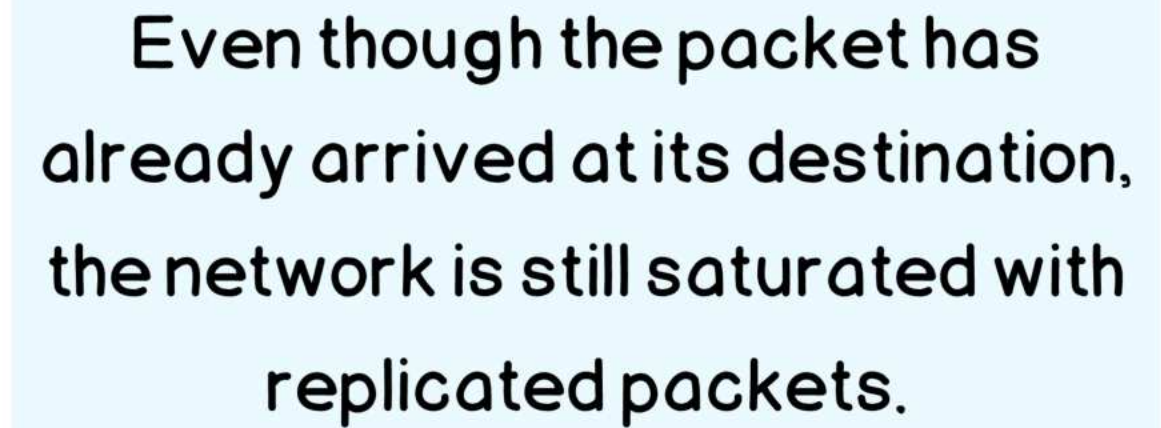
ISACA Code of Conduct

ISC

TRAFFIC CONGESTION EVAL



The packet is forwarded to all nodes in the network by the Hub. When the Bridge receives the packet, it replicates the packet and these packets are forwarded



Even though the packet has already arrived at its destination, the network is still saturated with replicated packets.

PROJECTED COSTS

- Duration: 3 months
- Network redesign
- Security training for employees on ransomware and phishing
- NAS server set up to mirror backups
- App server will no longer be used as a data backup

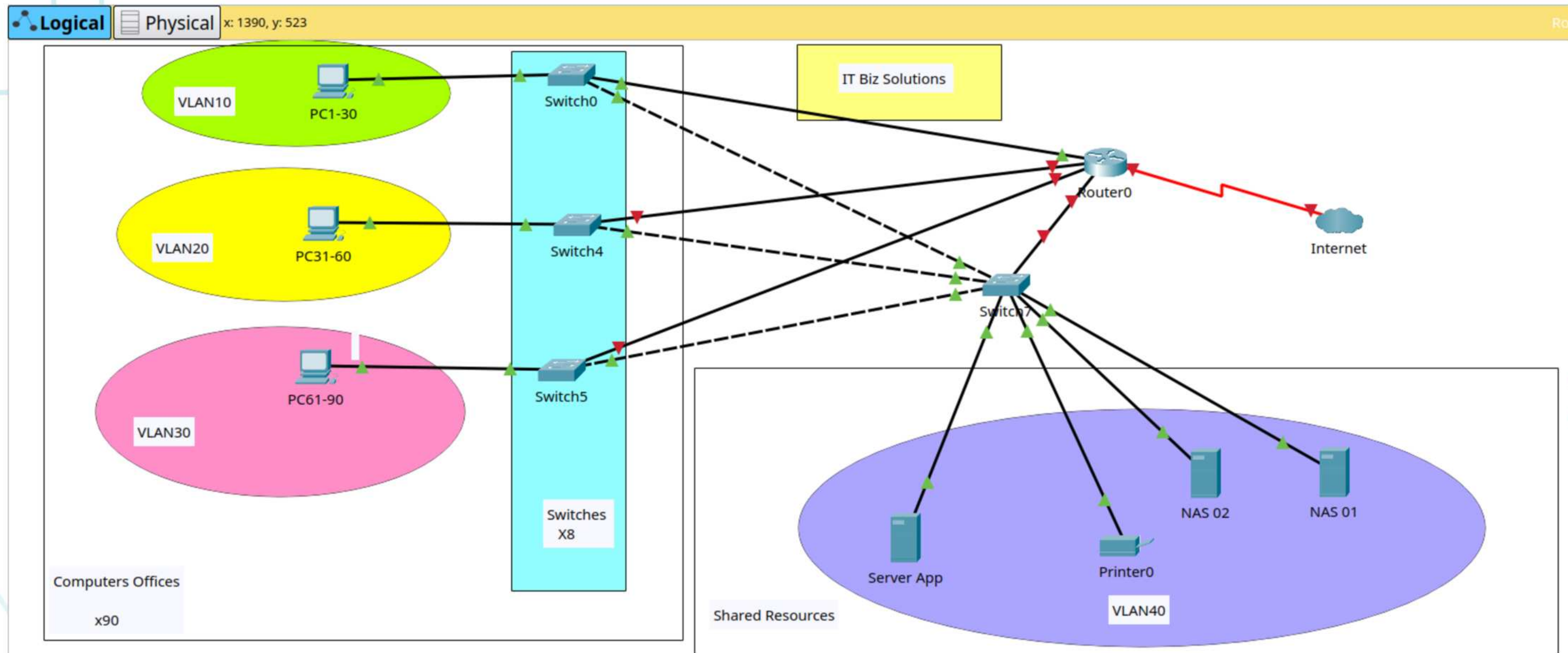


PROJECTED COSTS

ITEM	COST
Hardware	\$18,470
Monthly Services	\$3,750
Human Resources Training	\$4,500
Total Project Cost	\$26,720



PROPOSAL NETWORK DESIGN



For simplicity, PCs and switches are grouped together

PROPOSAL NETWORK DESIGN

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9	SWITCH
2	NAS
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1	ISP Connection
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