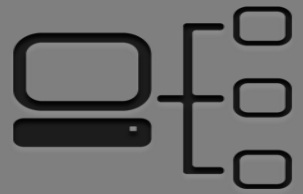
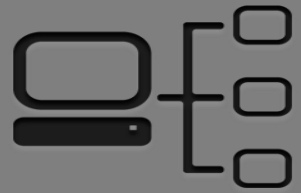
Designing a Network



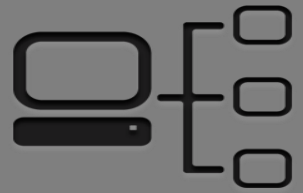
- More than assembling hardware and software
- You must consider:
  - Capacity, response time, throughput, ease of use, reliability, security, and so forth
- Must be designed to fulfill the needs of the users
- You must custom tailor your design per the **required** and/or **desired** user requirements

Network Design Process



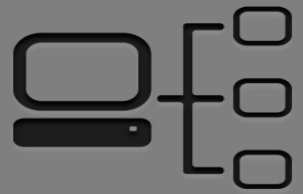
1. Identify the uses of the network
2. List which tasks execute on which computers
3. Select the type of network: centralized or not
4. Select the Proper Equipment
5. “Draw” the network
6. Write the specifications
7. Built it!

Step 1: Identify the Uses of the Network



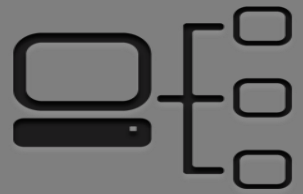
- This aligns with our network planning phase
- Need to determine why the organization needs a network
- Find out via interviews:
  - The organization's core business (What do they do?)
  - How they want to change & improve business operations (How can a network help the business?)
- You want to interview the the owners, executives, managers, operations staff, etc.
- The more you find out about the business, the better!

Step 2: List Which Tasks Execute on Which Computers



- Know which **applications** and **tasks** have to be performed at each of the computers on the network
- You need to know **how powerful** each computer should be and what each computer should be capable of (CPU, RAM, HD Space, Monitor Size)
- This goes for both server and client computers
- Example: A computer for data entry versus a computer for video editing

Step 4: Select the Proper Equipment



- Determine what networking equipment is right for the custom-tailored network design
- Consider everything you had done so far:
  - Identified the uses of the network
  - Identified what task is done on what computer
  - Peer-to-Peer or Client/Server architecture selection
- Also consider:
  - Monetary constraints
  - Reliability, Security, Availability, Scalability requirements

Desktop Selection

Vostro 460 Mini Tower Desktop

★★★½☆

(14 Reviews)

Small businesses seeking a cost-effective business desktop with the latest technology that can deliver superb performance and expandability for future needs.

Starting Price $549.00

Total Savings $80.00

Dell Price $469.00

As low as $15[1] / month | Apply

Select ›

View Details ›

Vostro 260 Mini Tower Desktop

★★★☆☆

(2 Reviews)

Small businesses seeking an essential mini tower desktop PC that's easy to set up, easy to use and designed for lasting value.

Starting Price $309.00

Total Savings $40.00

Dell Price $269.00

As low as $15[1] / month | Apply

Select ›

View Details ›

Vostro 260s Slim Tower Desktop

★★★★½

(3 Reviews)

Small businesses seeking an essential space-saving desktop PC that's easy to set up, easy to use and designed for lasting value.

Starting Price $309.00

Total Savings $40.00

Dell Price $269.00

As low as $15[1] / month | Apply

Select ›

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Server Type Selection

First Server Solutions

Pre-configured solutions for businesses looking to establish greater control and centralization over critical business information

Shop ›

Tower Servers

Dell PowerEdge Tower Servers are designed for flexibility, scalability and outstanding price performance.

Shop ›

Rack Servers

Dell PowerEdge Rack Servers maximize productivity while offering industry leading performance and efficiency in a rack form factor.

Shop ›

Blade Server Solutions

Dell PowerEdge Blade Servers offer density without compromise. Dell blade servers are simpler, faster, cooler.

Shop ›

PowerEdge C Servers

Businesses that need hyperscale-inspired performance and efficiency.

Shop ›

Server Selection

PowerEdge T110 II Tower Server

★★★★☆
(3 Reviews)

Starting Price $586.00

Total Savings $205.00

Dell Price $381.00

As low as $15[1] / month | Apply

PowerEdge T110 II is an ideal first server for small business with the right combination of value, reliability, collaboration and data protection features to improve your business continuity and productivity.

Select ›

View Details ›

PowerEdge T310 Tower Server

★★★★☆
(19 Reviews)

Starting Price $785.00

Total Savings $275.00

Dell Price $510.00

As low as $15[1] / month | Apply

The PowerEdge T310 is an Intel processor-based 1-socket tower server that provides growing businesses and remote offices enterprise-class performance, advanced systems management options and redundancy.

Select ›

View Details ›

PowerEdge T410 Tower Server

★★★★★
(10 Reviews)

Starting Price $1236.00

Total Savings $327.00

Dell Price $909.00

As low as $23[1] / month | Apply

The PowerEdge T410 is an Intel processor-based 2-socket tower server well-suited for growing businesses and remote sites that require high performance, flexibility, advanced systems management and value.

Select ›

View Details ›

PowerEdge T610 Tower Server

★★★★★
(17 Reviews)

Starting Price $1406.00

Total Savings $437.00

Dell Price $969.00

As low as $24[1] / month | Apply

The PowerEdge T610 is an Intel processor-based 2-socket tower server ideal for growing small and medium businesses, as well as remote sites that require high availability, exceptional virtualization capabilities, and advanced systems management.

Select ›

View Details ›

PowerEdge T710 Tower Server

★★★★★
(14 Reviews)

Starting Price $1426.00

Total Savings $407.00

Dell Price $1019.00

As low as $25[1] / month | Apply

The PowerEdge T710 is an Intel processor-based 2-socket tower server that offers remote sites, large business units and growing businesses robust virtualization and server consolidation features, outstanding scalability and advanced systems management.

Select ›

View Details ›

Tape Backup Option

Available Models

PowerVault Tape Drives

GREAT FOR

Nightly backups of a single server with less than 800GB

As low as

$1798.00

Shop >

Available Models

Rackable Tape Drives

GREAT FOR

Weekly backups of one or two servers with less than 1.6TB

As low as

$449.99

Shop >

Available Models

Tape Automation

GREAT FOR

High-capacity, high-speed storage -- for use as direct server backup or as part of a SAN fabric

As low as

$4699.00

Shop >

Uninterrupted Battery Backup (UPS)

Surge Protection

Enterprise Cooling

Power Distribution

UPS/Battery Back Up

Featured or Related Products

Customer Rating

4.9 out of 5

American Power Conversion
BE550G Back UPS - 330 Watt

Dell Price $59.99

Customer Rating

4.9 out of 5

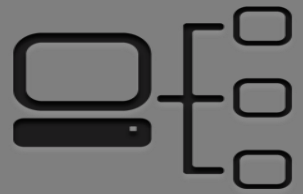
American Power Conversion
APC BACK-UPS ES 750VA 10OUT 120 VOLT MASTER CONTROL

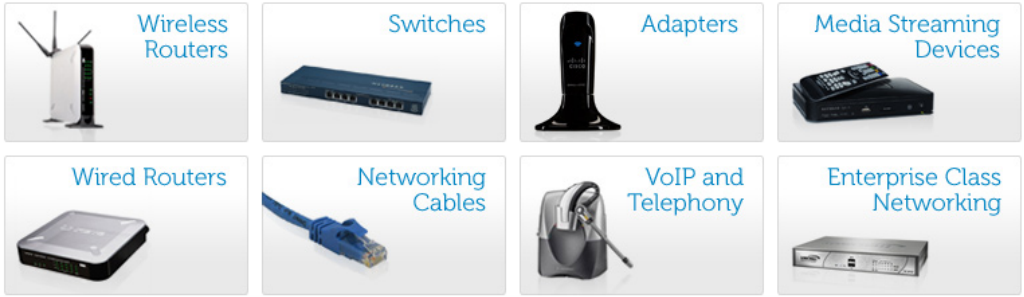
Dell Price $84.99

Dell
Dell UPS Tower 1000-Watt 100 / 120 VAC with NEMA 5-15p

Dell Price $479.99

Networking Equipment





Featured or Related Products

Customer Rating

4.7 out of 5

Netgear
Netgear 600Mbps RangeMax Dual-Band Wireless-N Router w/Gigabit ports (WNDR3700)

Dell Price $119.99

Customer Rating

3.4 out of 5

Cisco Small Business
WRVS4400N Wireless-N Gigabit Security Router with VPN

Dell Price $189.99

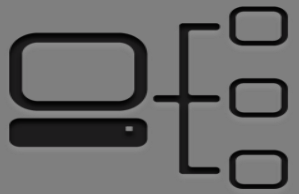
Customer Rating

5.0 out of 5

Netgear
SRXN3205 ProSafe Wireless-N VPN Firewall

Dell Price $285.99

Physical Security



Kensington

Kensington K64529US MicroSaver Security Cable Lock

- **Type:** Cable Lock
- **Specifications:** 6-ft carbon tempered steel cable T-bar provides superior locking grip to security slot Includes 2 keys Includes rubber cable tie for cable management
- **Features:** Super-strong, steel composite cable with carbon tempered steel core 6-ft, 5.5mm thick cable Built-in defense system guards against lock tampering T-bar lock provides superior lock strength in the security slot and theft protection Easy to install & use for use in the office or when traveling Locks into the standard Kensington Security Slot found in
- **Parts:** 2 years limited
- **Model #:** K64529US
- **Item #:** N82E16824997552
- **Return Policy:** Standard Return Policy

was: $49.99

$38.99

$4.99 Shipping

ADD TO CART

Kensington

Kensington K64530US MicroSaver Cable Lock

- **Type:** Projector Lock
- **Features:** Super-strong, steel composite cable with carbon tempered steel core 6-ft, 5.5mm thick cable Built-in defense system guards against lock tampering T-bar lock provides superior lock strength in the security slot and theft protection Easy to install & use for use in the office or when traveling Locks into the standard Kensington
- **Parts:** 1 year limited
- **Labor:** 1 year limited
- **Model #:** K64530US
- **Item #:** N82E16824995256
- **Return Policy:** Limited Replacement Only Return Policy

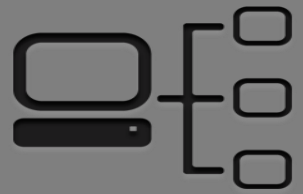
was: $49.99

$41.99

$2.99 Shipping

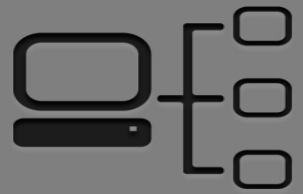
ADD TO CART

Cloud Computing



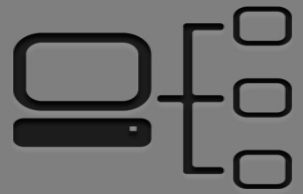
- Consider Software as a Service
  - Office Productivity Software
  - Data Backups
  - Data Storage
- Infrastructure as a Service
  - Cloud-Based Servers (Virtualized Server Space)
  - Amazon Web Servers (AWS)
- Concern: Security. HIPPA Certified, PCI DSS

Step 5: Draw the Network



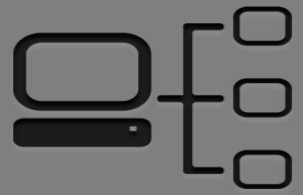
- By the time you reach this step, you should know the following:
  - The purpose of the network
  - The specifics of the network's use
  - The number of users and computers
  - Whether the network will be centralized or not
  - The network topology
- In this step, you want to draw the physical and logical design
  - Physical layout of equipment and logical layout of IP addresses and your network(s) (Subnetting)
  - 10 in 1 Office
  - 25 in 2nd Office in 5 years
  - 1 Public Class C Subnet Purchased

Step 6: Write the Specifications



- The purpose of the specification document is:
  - To limit the scope of the network design; prevents scope creep
  - To provide a reference document for network administrators
- Should include:
  - Why the organization is building the network
  - What the network will be used for
  - How many people and computers the network will support
  - If the network is peer-to-peer or client/server
  - The response time and throughput requirements
  - The security requirements (physical and logical)
  - The reliability requirements (availability)
  - The scalability requirements
  - Specifications & justification for all hardware and software
- Ensure the organization buy's into your design specifications

Step 7: Build It!



- After you've completed steps 1 – 5 and the organization agrees, build the network!