

PROJECT OBJECTIVE:

Because Rob said we had to do it.

Design a large network.

COMPANY:

ITP Corporation

FQDN = itp.local

ITP has been in existence for over 15 years. The company's main focus is training. ITP has grown the past fifteen years through acquisitions and mergers. ITP headquarters is located in Pittsburgh but has many locations throughout the United States:

New York	Boston	Pittsburgh
Chicago	Boise	Great Falls
Springfield	Seattle	Atlanta
Orlando	Tampa	New Orleans
Houston	Phoenix	Los Angeles
San Diego		

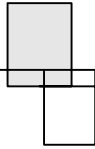
Child domains of the itp.local domain are:

1. training.itp.local
2. sales.itp.local
3. marketing.itp.local
4. it.itp.local

There are four OU's contained in each domain which are named the same as the four sites listed below.

There are four sites which are also parent OU of each city OU:

1. NE - Northeast
2. NW - Northwest
3. SE - Southeast
4. SW - Southwest



COMPANY: (continued)

SUB OU Categorized by each Parent OU and Site:

NW:	SW:	NE:	SE:
Seattle	Houston	Chicago	Atlanta
Springfield	Phoenix	Pittsburgh	Tampa
Boise	San Diego	New York	Orlando
Great Falls	Los Angeles	Boston	New Orleans

Each city is a sub OU of a parent OU which is a Site.

Root of each Domain is located in the Pittsburgh site of each NW OU.

Each sub OU (city) of each site in each domain, contains the following servers as its minimal requirement:

- 2 Active Directory integrated DNS domain controllers
- 1 DHCP server
- 1 WINS server
- 1 RAS server

We will be using a 10.0.0.0 Class A Private IP Addressing Scheme.

The subnet will be 255.248.0.0. This provides 30 networks and 524,000 hosts.

The CIDR (classless internet domain routing) Scheme will be 10.0.0.0/13

The IP Addressing Scheme are found on Page 9

The CISCO Connectivity Scheme is found on Page 10

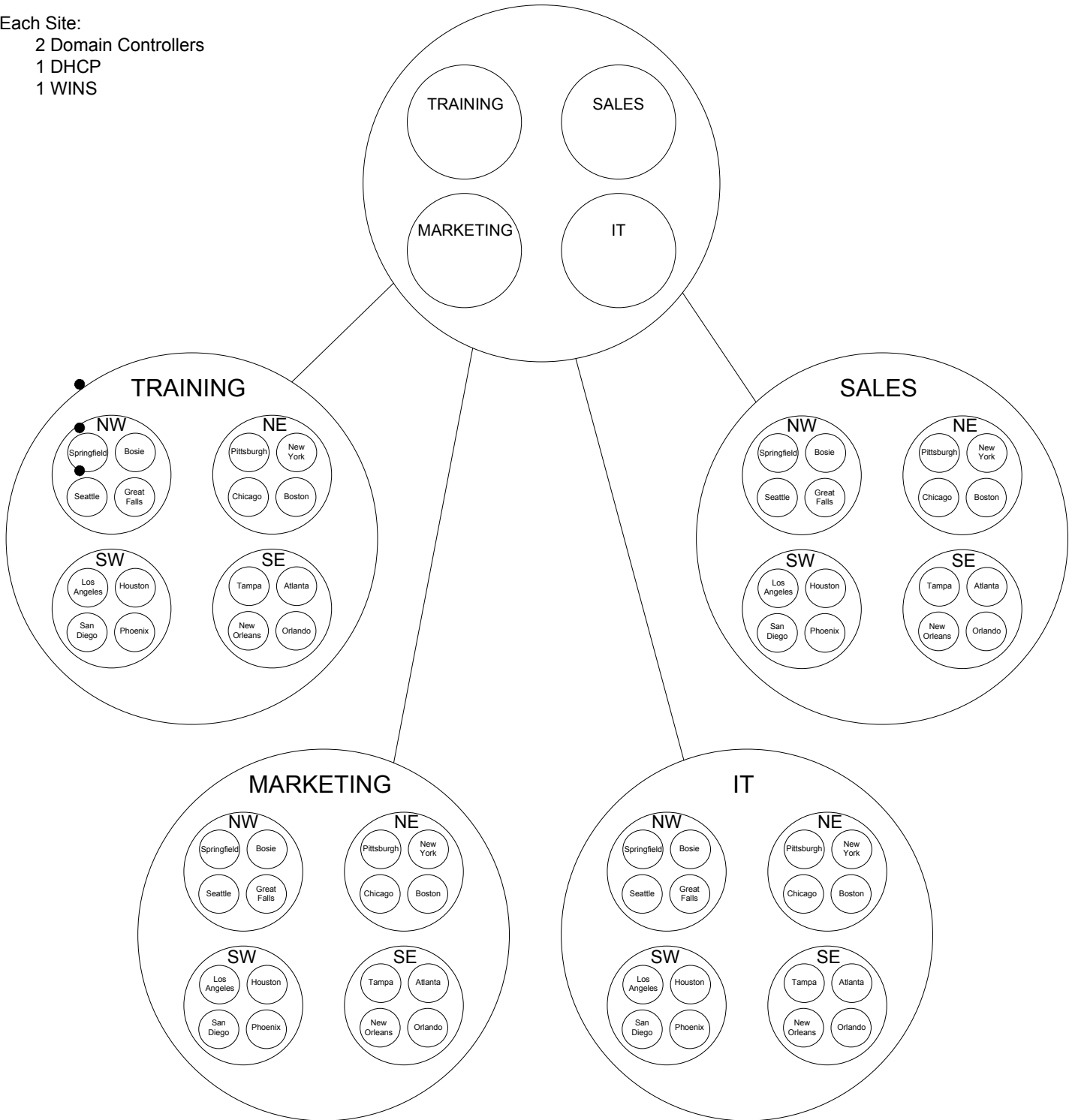
Logical Layout:

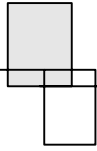
Pittsburgh = HEADQUARTERS

Each Site:

- 2 Domain Controllers
- 1 DHCP
- 1 WINS

itp.local



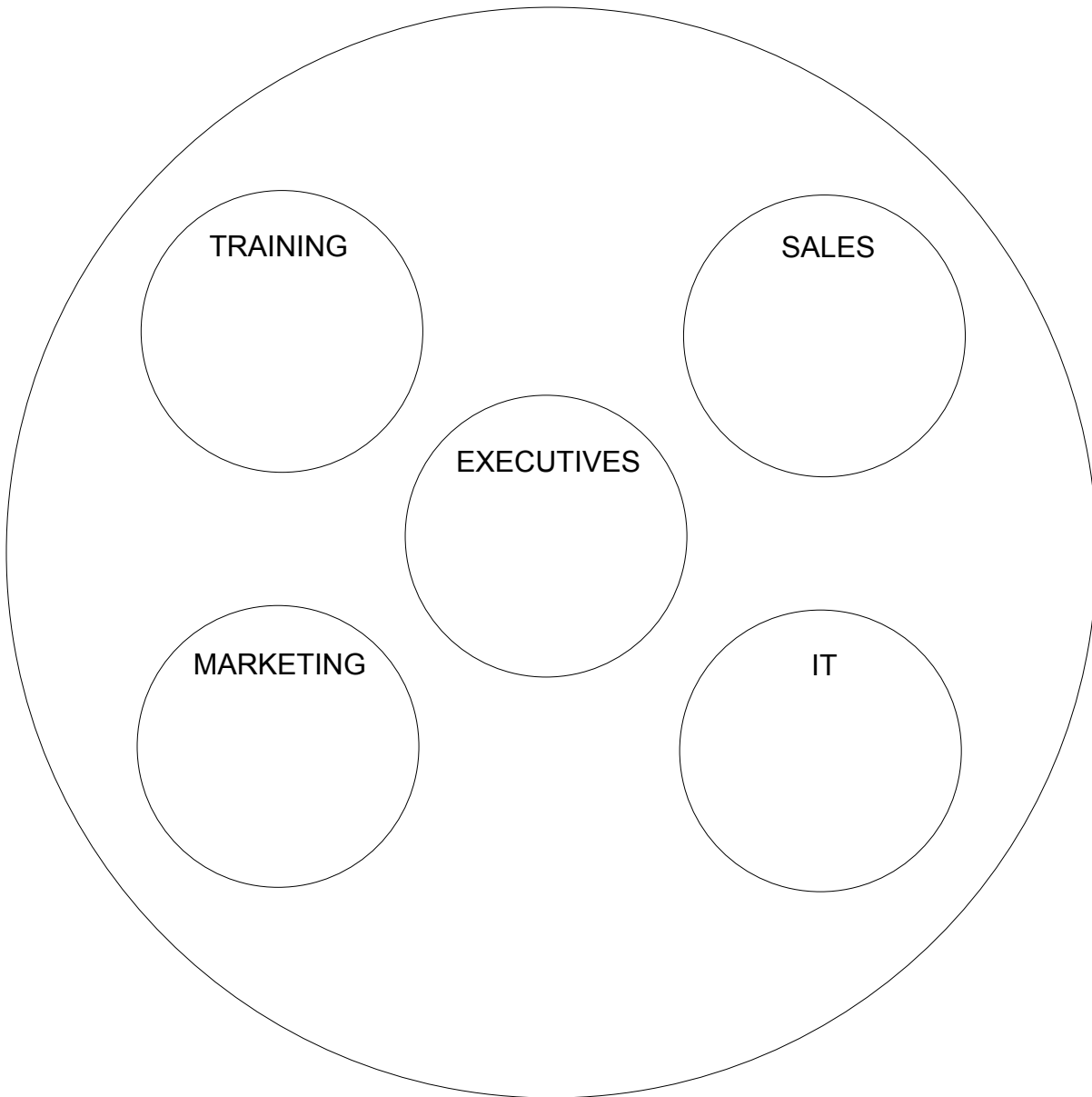


Headquarters Logical Layout:

HEADUARTERS

Domain Root located in Pittsburgh

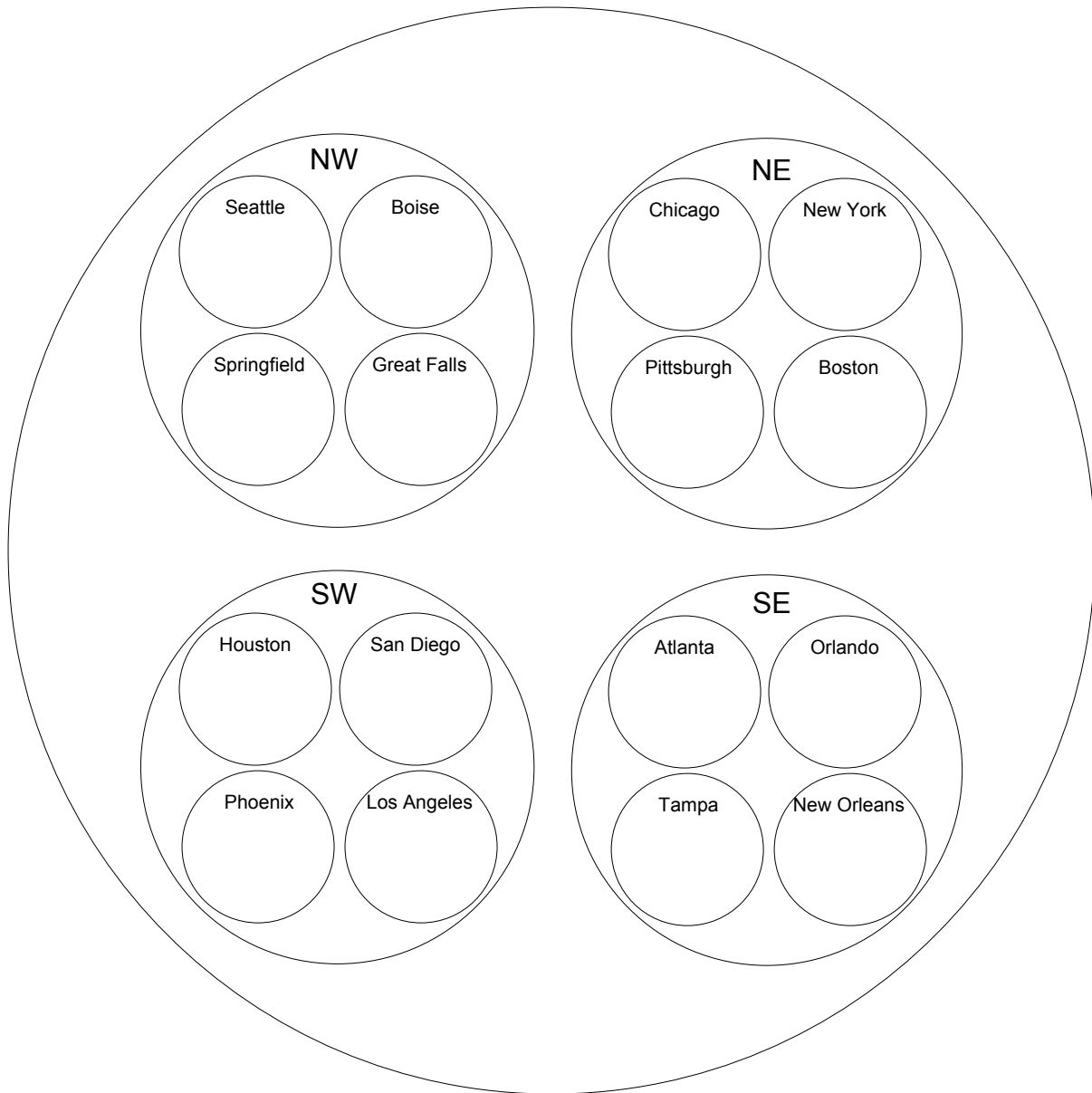
itp.local

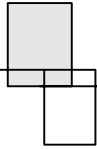


Training Logical Layout:

Pittsburgh = Domain Root

marketing.itp.local

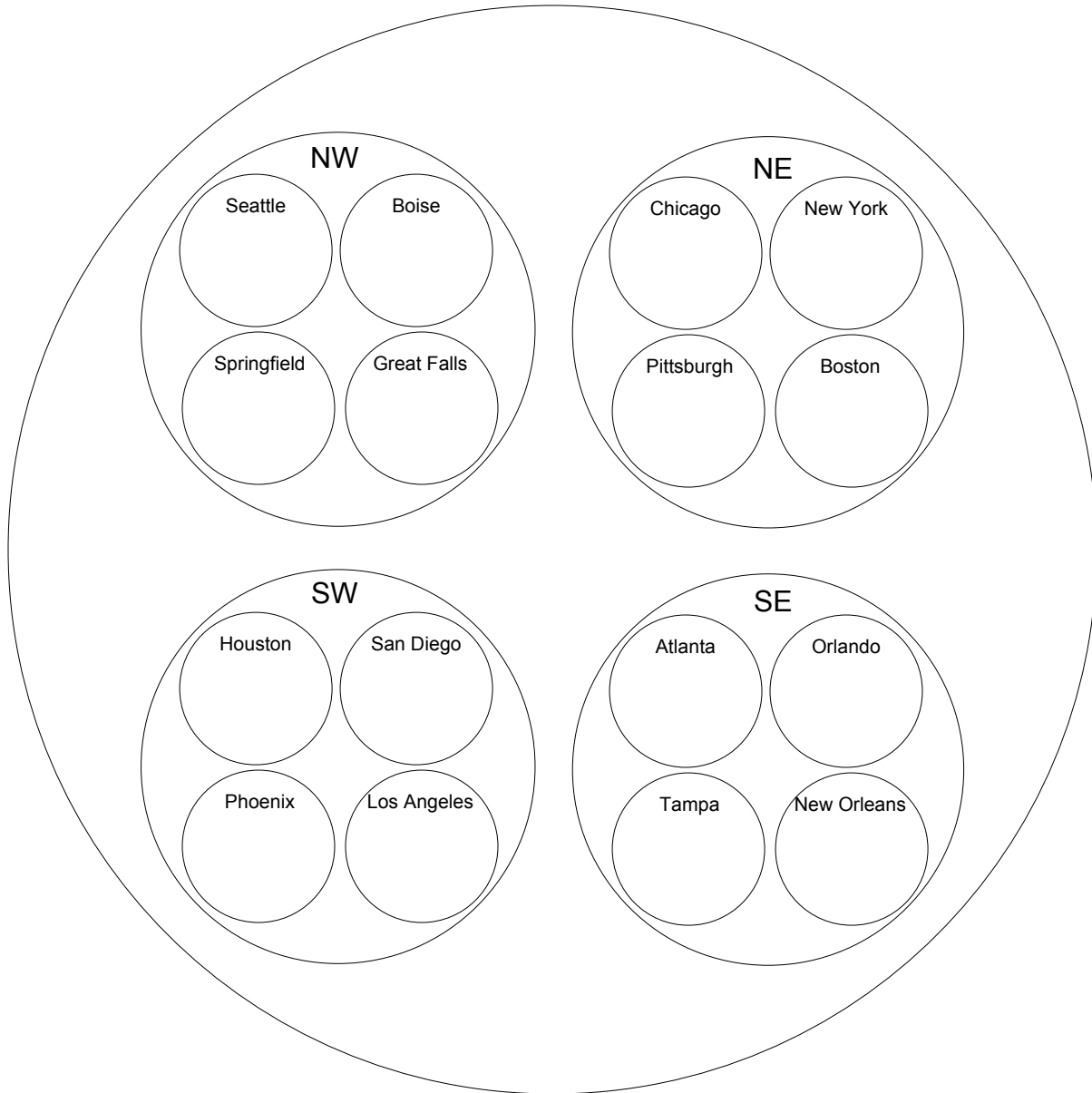


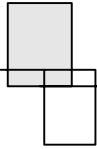


Training Logical Layout:

Pittsburgh = Domain Root

training.itp.local

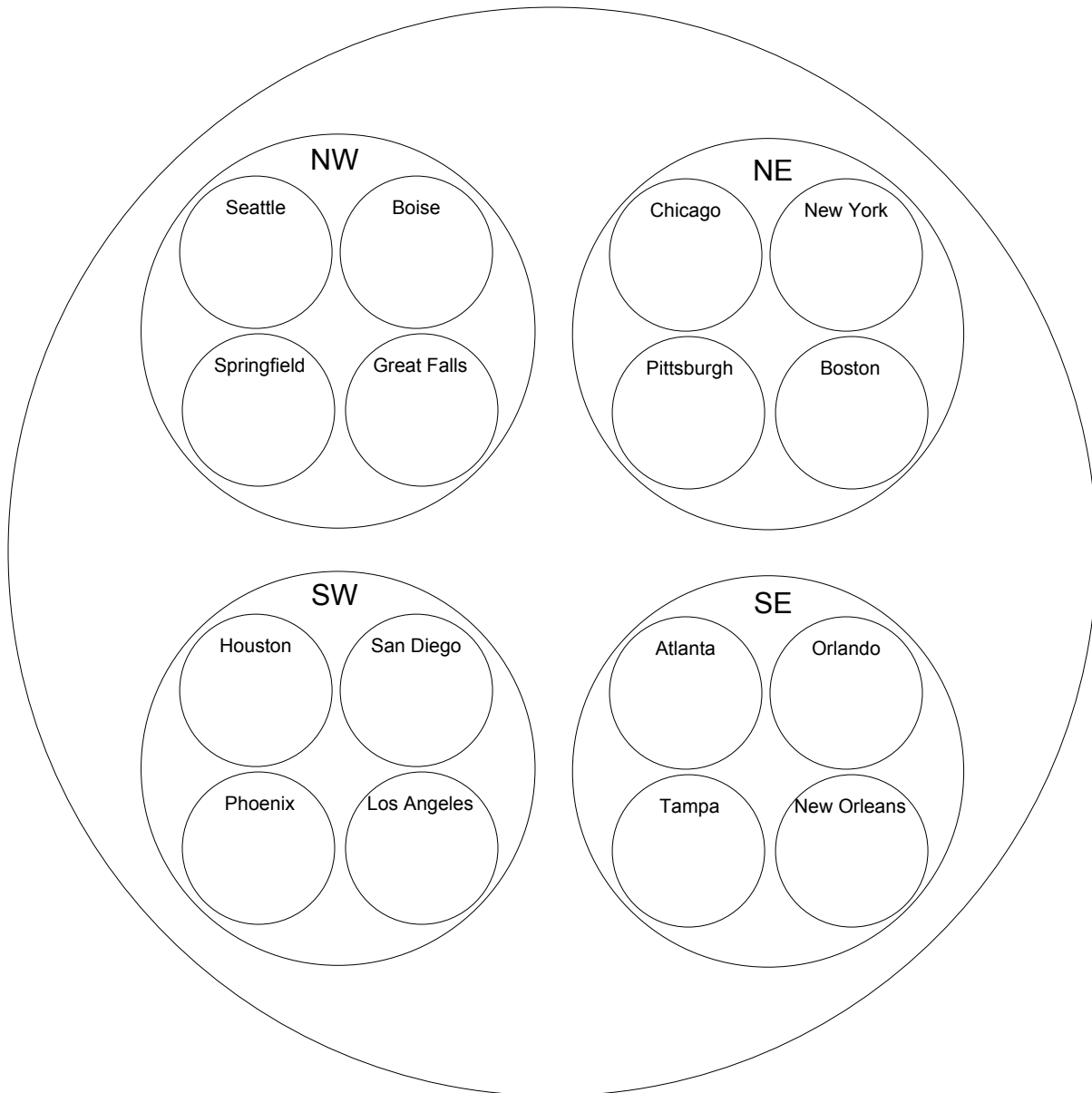


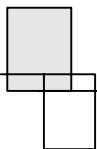


IT Logical Layout:

Pittsburgh = Domain Root

it.itp.local

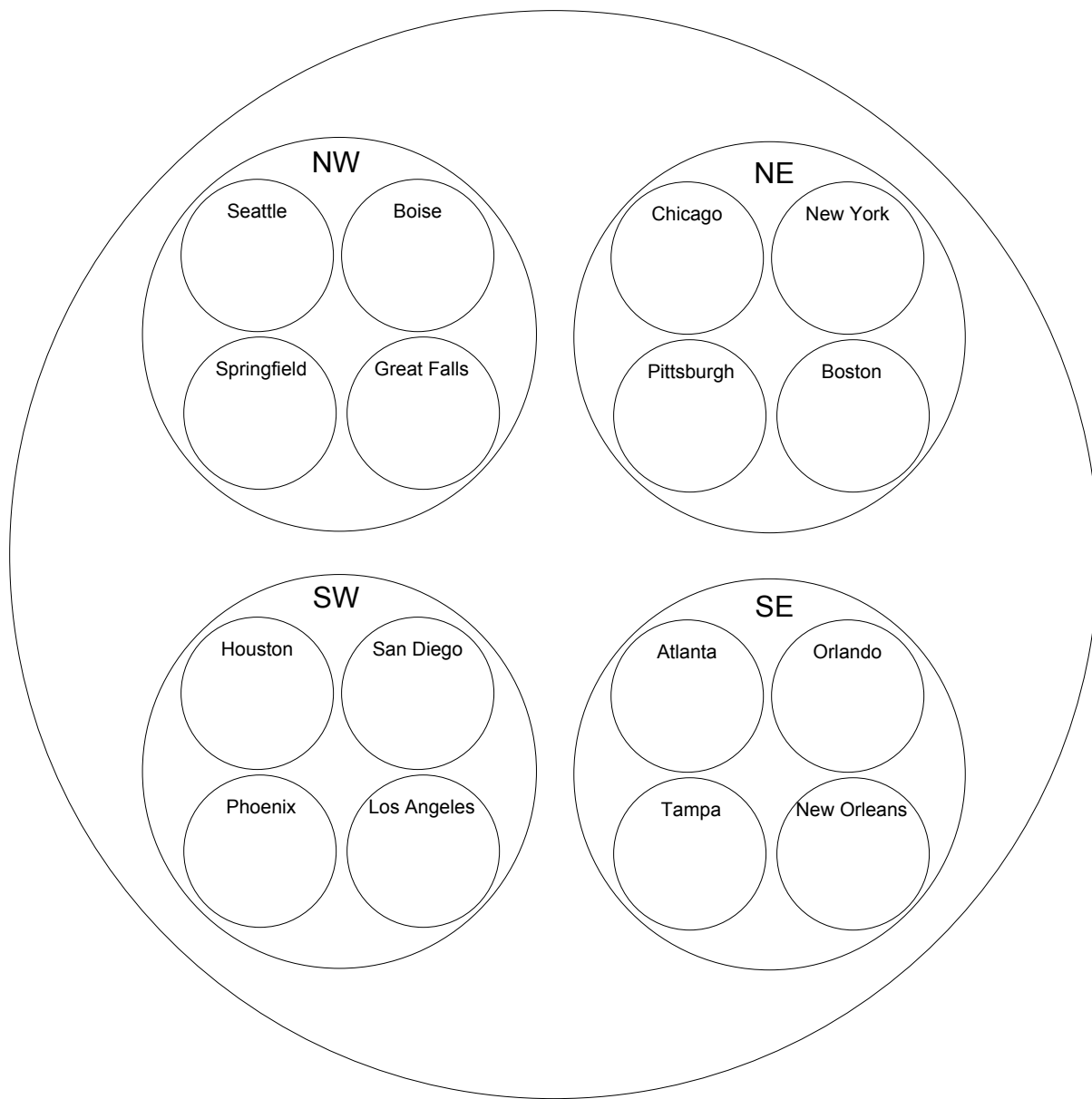




IT Logical Layout:

Pittsburgh = Domain Root

sales.itp.local



IP Addressing Scheme: 10.0.0.0/13

NEW YORK

Routers 10.24.0.1 to 10.24.0.254
Servers 10.25.0.0 to 10.25.0.254
Workstations 10.26.0.0 to 10.31.0.254

BOSTON

Routers 10.32.0.1 to 10.32.0.254
Servers 10.33.0.0 to 10.33.0.254
Workstations 10.34.0.0 to 10.39.0.254

PITTSBURGH

Routers 10.40.0.1 to 10.40.0.254
Servers 10.41.0.0 to 10.41.0.254
Workstations 10.42.0.0 to 10.47.0.254

CHICAGO

Routers 10.48.0.1 to 10.48.0.254
Servers 10.49.0.0 to 10.49.0.254
Workstations 10.50.0.0 to 10.50.0.254

BOISE

Routers 10.56.0.1 to 10.56.0.254
Servers 10.57.0.0 to 10.57.0.254
Workstations 10.58.0.0 to 10.63.0.254

GREAT FALLS

Routers 10.64.0.1 to 10.64.0.254
Servers 10.65.0.0 to 10.65.0.254
Workstations 10.66.0.0 to 10.66.0.254

SPRINGFIELD

Routers 10.72.0.1 to 10.72.0.254
Servers 10.73.0.0 to 10.73.0.254
Workstations 10.74.0.0 to 10.79.0.254

SEATTLE

Routers 10.80.0.1 to 10.80.0.254
Servers 10.81.0.0 to 10.81.0.254
Workstations 10.82.0.0 to 10.87.0.254

HEADQUARTERS

Routers 10.16.0.1 to 10.16.0.254
Servers 10.17.0.0 to 10.17.0.254
Workstations 10.18.0.0 to 10.23.0.254

ATLANTA

Routers 10.88.0.1 to 10.88.0.254
Servers 10.89.0.0 to 10.89.0.254
Workstations 10.90.0.0 to 10.95.0.254

ORLANDO

Routers 10.96.0.1 to 10.96.0.254
Servers 10.97.0.0 to 10.97.0.254
Workstations 10.98.0.0 to 10.103.0.254

TAMPA

Routers 10.104.0.1 to 10.104.0.254
Servers 10.105.0.0 to 10.105.0.254
Workstations 10.106.0.0 to 10.111.0.254

NEW ORLEANS

Routers 10.112.0.1 to 10.112.0.254
Servers 10.113.0.0 to 10.113.0.254
Workstations 10.114.0.0 to 10.119.0.254

HOUSTON

Routers 10.120.0.1 to 10.120.0.254
Servers 10.121.0.0 to 10.121.0.254
Workstations 10.122.0.0 to 10.127.0.254

PHOENIX

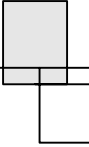
Routers 10.128.0.1 to 10.128.0.254
Servers 10.129.0.0 to 10.129.0.254
Workstations 10.130.0.0 to 10.135.0.254

LOS ANGELES

Routers 10.136.0.1 to 10.136.0.254
Servers 10.137.0.0 to 10.137.0.254
Workstations 10.138.0.0 to 10.143.0.254

SAN DIEGO

Routers 10.144.0.1 to 10.144.0.254
Servers 10.145.0.0 to 10.145.0.254
Workstations 10.146.0.0 to 10.151.0.254



Cisco Layout:

E = goes to a Switch - or - connects to another Switch (Ethernet Ports)
S = goes to a Router - or - connects to another Router (Serial Line Interfaces)

HEADQUARTERS

S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16																
<table border="0" style="width: 100%;"> <tr> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>New York</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>Boise</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>Atlanta</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>Houston</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> </tr> <tr> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>Boston</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>Great Falls</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>Orlando</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>Phoenix</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> </tr> <tr> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>Pittsburgh</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>Springfield</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>Tampa</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>Los Angeles</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> </tr> <tr> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>Chicago</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>Seattle</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>New Orleans</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> <td style="text-align: center; vertical-align: top;"> <p><u>S0</u> <u>San Diego</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p> </td> </tr> </table>																	<p><u>S0</u> <u>New York</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>Boise</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>Atlanta</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>Houston</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>Boston</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>Great Falls</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>Orlando</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>Phoenix</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>Pittsburgh</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>Springfield</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>Tampa</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>Los Angeles</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>Chicago</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>Seattle</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>New Orleans</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>	<p><u>S0</u> <u>San Diego</u></p> <p>E0 - Training</p> <p>E1 - Sales</p> <p>E2 - Marketing</p> <p>E3 - IT</p>
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