UNIVERSIDAD DE BUENOS AIRES
FACULTAD DE INGENIERÍA
Año 2011 - 1$^{\text{er}}$ Cuatrimestre

INTRODUCCIÓN A LOS SISTEMAS DISTRIBUIDOS (75.43)

TRABAJO PRÁCTICO GRUPAL

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Índice

1. Determinación de las subredes

En base a la topología propuesta y utilizando la RFC950, se asignaron las siguientes subredes:

Nombre	Hosts	Bloque	Dirección	Máscara
Moscu	247	256	10.42.5.0	/24
Tokyo (*)	204	256	10.69.5.0	/24
Seul	114	128	10.39.25.128	/25
Pekin (*)	103	256	192.168.15.0	/24
Bagdag (*)	51	64	10.39.25.0	/26
Singapur (*)	26	32	10.69.6.128	/27
Taipei	21	32	10.69.6.160	/27
Bangkok	21	32	10.39.25.64	/27
Beirut	18	32	10.69.6.224	/27
Kuwait	17	32	10.69.6.192	/27
Yakarta	5	8	10.27.15.192	/29
Damasco	2	4	10.27.15.200	/30
Jerusalen	2	4	10.27.15.204	/30
Nueva Deli	2	4	172.51.5.192	/30
Kabul	2	4	172.51.5.196	/30
Katmandu	2	4	172.51.5.200	/30
Teheran	2	4	172.51.5.204	/30
Ankara	2	4	135.143.5.0	/30
Pionyang	2	4	135.143.5.4	/30

Cuadro 1: Asignación de direcciones de red.

(*): Redes asignadas teniendo en cuenta las direcciones IP fijas de los servidores determinadas por el enunciado.
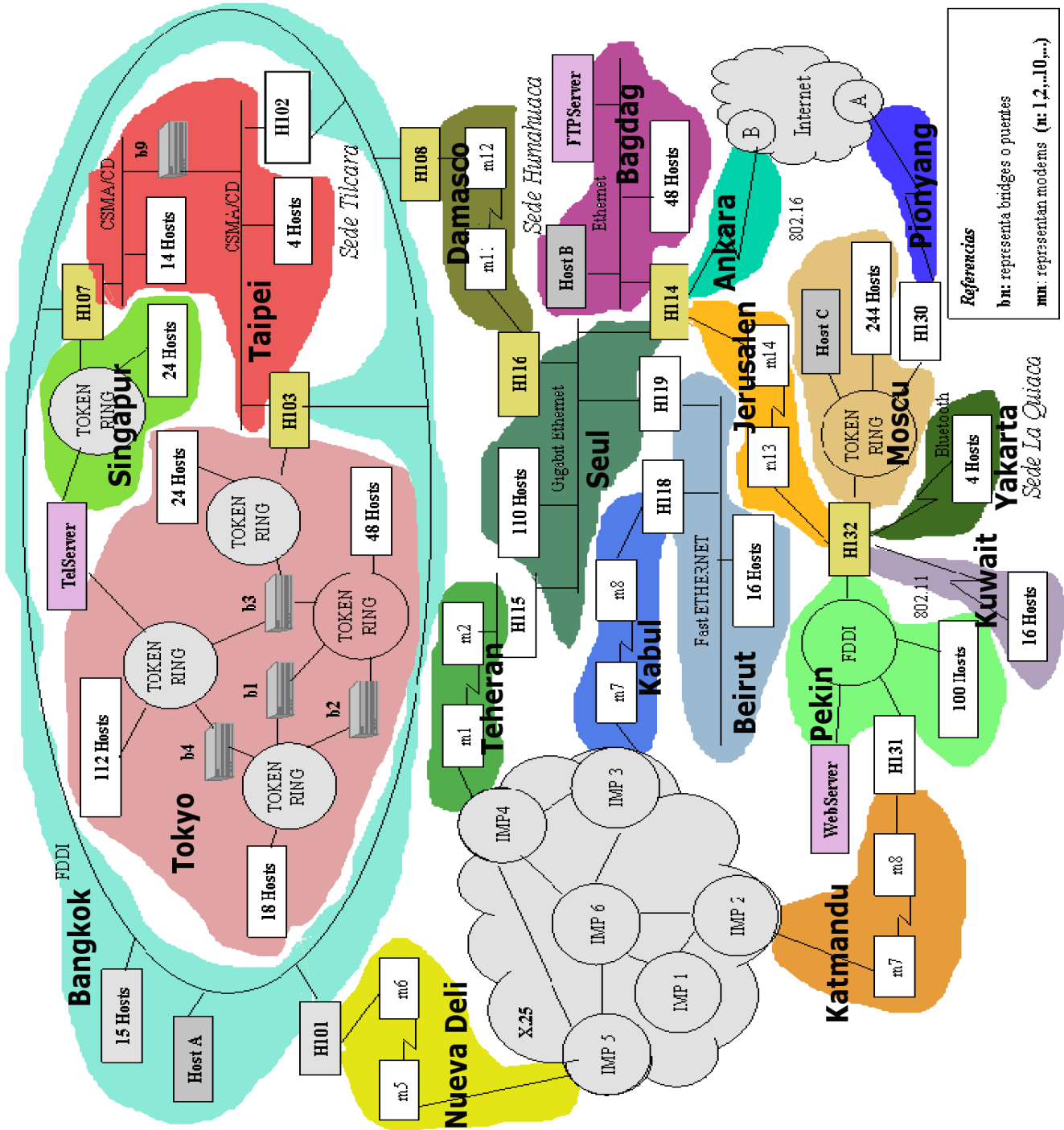
Figura 1: Topología de subredes.

2. Tablas de ruteo

A continuacón se incluyen las tablas de ruteo para todos los routers.

2.1. H101

Dirección	Máscara	Gateway	Métrica
10.27.15.200	255.255.255.252	10.39.25.68	1
10.27.15.204	255.255.255.252	10.39.25.68	3
172.51.5.192	255.255.255.252	172.51.5.193	0
172.51.5.196	255.255.255.252	10.39.25.68	4
172.51.5.200	255.255.255.252	10.39.25.68	5
172.51.5.204	255.255.255.252	10.39.25.68	3
135.143.5.0	255.255.255.252	10.39.25.68	3
135.143.5.4	255.255.255.252	10.39.25.68	5
10.27.15.192	255.255.255.248	10.39.25.68	4
10.69.6.128	255.255.255.224	10.39.25.67	1
10.69.6.160	255.255.255.224	10.39.25.68	1
10.39.25.64	255.255.255.224	10.39.25.65	0
10.69.6.224	255.255.255.224	10.39.25.68	3
10.69.6.192	255.255.255.224	10.39.25.68	4
10.39.25.0	255.255.255.192	10.39.25.68	3
10.39.25.128	255.255.255.128	10.39.25.68	2
10.42.5.0	255.255.255.0	10.39.25.68	4
10.69.5.0	255.255.255.0	10.39.25.66	1
192.168.15.0	255.255.255.0	10.39.25.68	4

Cuadro 2: Tabla de ruteo H101.

2.2.   H102

Dirección	Máscara	Gateway	Métrica
10.27.15.200	255.255.255.252	10.39.25.68	1
10.27.15.204	255.255.255.252	10.39.25.68	3
172.51.5.192	255.255.255.252	10.39.25.65	1
172.51.5.196	255.255.255.252	10.39.25.68	4
172.51.5.200	255.255.255.252	10.39.25.68	5
172.51.5.204	255.255.255.252	10.39.25.68	3
135.143.5.0	255.255.255.252	10.39.25.68	3
135.143.5.4	255.255.255.252	10.39.25.68	5
10.27.15.192	255.255.255.248	10.39.25.68	4
10.69.6.128	255.255.255.224	10.39.25.67	1
10.69.6.160	255.255.255.224	10.69.6.163	0
10.39.25.64	255.255.255.224	10.39.25.69	0
10.69.6.224	255.255.255.224	10.39.25.68	3
10.69.6.192	255.255.255.224	10.39.25.68	4
10.39.25.0	255.255.255.192	10.39.25.68	3
10.39.25.128	255.255.255.128	10.39.25.68	2
10.42.5.0	255.255.255.0	10.39.25.68	4
10.69.5.0	255.255.255.0	10.39.25.66	1
192.168.15.0	255.255.255.0	10.39.25.68	4

Cuadro 3: Tabla de ruteo H102.

2.3.   H103

Dirección	Máscara	Gateway	Métrica
10.27.15.200	255.255.255.252	10.39.25.68	1
10.27.15.204	255.255.255.252	10.39.25.68	3
172.51.5.192	255.255.255.252	10.39.25.65	1
172.51.5.196	255.255.255.252	10.39.25.68	4
172.51.5.200	255.255.255.252	10.39.25.68	5
172.51.5.204	255.255.255.252	10.39.25.68	3
135.143.5.0	255.255.255.252	10.39.25.68	5
135.143.5.4	255.255.255.252	10.39.25.68	3
10.27.15.192	255.255.255.248	10.39.25.68	4
10.69.6.128	255.255.255.224	10.39.25.67	1
10.69.6.160	255.255.255.224	10.69.6.161	0
10.39.25.64	255.255.255.224	10.39.25.66	0
10.69.6.224	255.255.255.224	10.39.25.68	3
10.69.6.192	255.255.255.224	10.39.25.68	4
10.39.25.0	255.255.255.192	10.39.25.68	3
10.39.25.128	255.255.255.128	10.39.25.68	2
10.42.5.0	255.255.255.0	10.39.25.68	4
10.69.5.0	255.255.255.0	10.69.5.1	0
192.168.15.0	255.255.255.0	10.39.25.68	4

Cuadro 4: Tabla de ruteo H103.

2.4. H107

Dirección	Máscara	Gateway	Métrica
10.27.15.200	255.255.255.252	10.39.25.68	1
10.27.15.204	255.255.255.252	10.39.25.68	3
172.51.5.192	255.255.255.252	10.39.25.65	1
172.51.5.196	255.255.255.252	10.39.25.68	4
172.51.5.200	255.255.255.252	10.39.25.68	5
172.51.5.204	255.255.255.252	10.39.25.68	3
135.143.5.0	255.255.255.252	10.39.25.68	3
135.143.5.4	255.255.255.252	10.39.25.68	5
10.27.15.192	255.255.255.248	10.39.25.68	4
10.69.6.128	255.255.255.224	10.69.6.130	0
10.69.6.160	255.255.255.224	10.69.6.162	0
10.39.25.64	255.255.255.224	10.39.25.67	0
10.69.6.224	255.255.255.224	10.39.25.68	3
10.69.6.192	255.255.255.224	10.39.25.68	4
10.39.25.0	255.255.255.192	10.39.25.68	3
10.39.25.128	255.255.255.128	10.39.25.68	2
10.42.5.0	255.255.255.0	10.39.25.68	4
10.69.5.0	255.255.255.0	10.39.25.66	1
192.168.15.0	255.255.255.0	10.39.25.68	4

Cuadro 5: Tabla de ruteo H107.

2.5. H108

Dirección	Máscara	Gateway	Métrica
10.27.15.200	255.255.255.252	10.27.15.201	0
10.27.15.204	255.255.255.252	10.27.15.202	2
172.51.5.192	255.255.255.252	10.39.25.65	1
172.51.5.196	255.255.255.252	10.27.15.202	3
172.51.5.200	255.255.255.252	10.27.15.202	4
172.51.5.204	255.255.255.252	10.27.15.202	2
135.143.5.0	255.255.255.252	10.27.15.202	2
135.143.5.4	255.255.255.252	10.27.15.202	4
10.27.15.192	255.255.255.248	10.27.15.202	3
10.69.6.128	255.255.255.224	10.39.25.67	1
10.69.6.160	255.255.255.224	10.39.25.66	1
10.39.25.64	255.255.255.224	10.39.25.68	0
10.69.6.224	255.255.255.224	10.27.15.202	2
10.69.6.192	255.255.255.224	10.27.15.202	3
10.39.25.0	255.255.255.192	10.27.15.202	2
10.39.25.128	255.255.255.128	10.27.15.202	1
10.42.5.0	255.255.255.0	10.27.15.202	3
10.69.5.0	255.255.255.0	10.39.25.66	1
192.168.15.0	255.255.255.0	10.27.15.202	3

Cuadro 6: Tabla de ruteo H108.

2.6. H114

Dirección	Máscara	Gateway	Métrica
10.27.15.200	255.255.255.252	10.39.25.131	1
10.27.15.204	255.255.255.252	10.27.15.205	0
172.51.5.192	255.255.255.252	10.39.25.131	3
172.51.5.196	255.255.255.252	10.39.25.132	2
172.51.5.200	255.255.255.252	10.27.15.206	2
172.51.5.204	255.255.255.252	10.39.25.130	1
135.143.5.0	255.255.255.252	135.143.5.1	0
135.143.5.4	255.255.255.252	10.27.15.206	2
10.27.15.192	255.255.255.248	10.27.15.206	1
10.69.6.128	255.255.255.224	10.39.25.131	3
10.69.6.160	255.255.255.224	10.39.25.131	3
10.39.25.64	255.255.255.224	10.39.25.131	2
10.69.6.224	255.255.255.224	10.39.25.132	1
10.69.6.192	255.255.255.224	10.27.15.206	1
10.39.25.0	255.255.255.192	10.39.25.2	0
10.39.25.128	255.255.255.128	10.39.25.129	0
10.42.5.0	255.255.255.0	10.27.15.206	1
10.69.5.0	255.255.255.0	10.39.25.131	3
192.168.15.0	255.255.255.0	10.27.15.206	1

Cuadro 7: Tabla de ruteo H114.

2.7.   H115

Dirección	Máscara	Gateway	Métrica
10.27.15.200	255.255.255.252	10.39.25.131	1
10.27.15.204	255.255.255.252	10.39.25.129	1
172.51.5.192	255.255.255.252	10.39.25.131	3
172.51.5.196	255.255.255.252	10.39.25.132	2
172.51.5.200	255.255.255.252	10.39.25.129	3
172.51.5.204	255.255.255.252	172.51.5.205	0
135.143.5.0	255.255.255.252	10.39.25.129	1
135.143.5.4	255.255.255.252	10.39.25.129	3
10.27.15.192	255.255.255.248	10.39.25.129	2
10.69.6.128	255.255.255.224	10.39.25.131	3
10.69.6.160	255.255.255.224	10.39.25.131	3
10.39.25.64	255.255.255.224	10.39.25.131	2
10.69.6.224	255.255.255.224	10.39.25.132	1
10.69.6.192	255.255.255.224	10.39.25.129	1
10.39.25.0	255.255.255.192	10.39.25.129	1
10.39.25.128	255.255.255.128	10.39.25.130	0
10.42.5.0	255.255.255.0	10.39.25.129	2
10.69.5.0	255.255.255.0	10.39.25.131	3
192.168.15.0	255.255.255.0	10.39.25.129	2

Cuadro 8: Tabla de ruteo H115.

2.8.   H116

Dirección	Máscara	Gateway	Métrica
10.27.15.200	255.255.255.252	10.27.15.202	0
10.27.15.204	255.255.255.252	10.39.25.129	1
172.51.5.192	255.255.255.252	10.27.15.201	2
172.51.5.196	255.255.255.252	10.39.25.132	2
172.51.5.200	255.255.255.252	10.39.25.129	3
172.51.5.204	255.255.255.252	10.39.25.130	1
135.143.5.0	255.255.255.252	10.39.25.129	3
135.143.5.4	255.255.255.252	10.39.25.129	3
10.27.15.192	255.255.255.248	10.39.25.129	2
10.69.6.128	255.255.255.224	10.27.15.201	2
10.69.6.160	255.255.255.224	10.27.15.201	2
10.39.25.64	255.255.255.224	10.27.15.201	2
10.69.6.224	255.255.255.224	10.39.25.132	1
10.69.6.192	255.255.255.224	10.39.25.129	2
10.39.25.0	255.255.255.192	10.39.25.129	1
10.39.25.128	255.255.255.128	10.39.25.131	0
10.42.5.0	255.255.255.0	10.39.25.129	2
10.69.5.0	255.255.255.0	10.27.15.201	2
192.168.15.0	255.255.255.0	10.39.25.129	2

Cuadro 9: Tabla de ruteo H116.

2.9. H118

Dirección	Máscara	Gateway	Métrica
10.27.15.200	255.255.255.252	10.69.6.226	2
10.27.15.204	255.255.255.252	10.69.6.226	2
172.51.5.192	255.255.255.252	10.69.6.226	4
172.51.5.196	255.255.255.252	172.51.5.197	0
172.51.5.200	255.255.255.252	10.69.6.226	4
172.51.5.204	255.255.255.252	10.69.6.226	2
135.143.5.0	255.255.255.252	10.69.6.226	2
135.143.5.4	255.255.255.252	10.69.6.226	4
10.27.15.192	255.255.255.248	10.69.6.226	3
10.69.6.128	255.255.255.224	10.69.6.226	4
10.69.6.160	255.255.255.224	10.69.6.226	4
10.39.25.64	255.255.255.224	10.69.6.226	3
10.69.6.224	255.255.255.224	10.69.6.225	0
10.69.6.192	255.255.255.224	10.69.6.226	3
10.39.25.0	255.255.255.192	10.69.6.226	2
10.39.25.128	255.255.255.128	10.69.6.226	1
10.42.5.0	255.255.255.0	10.69.6.226	3
10.69.5.0	255.255.255.0	10.69.6.226	4
192.168.15.0	255.255.255.0	10.69.6.226	3

Cuadro 10: Tabla de ruteo H118.

2.10.   H119

Dirección	Máscara	Gateway	Métrica
10.27.15.200	255.255.255.252	10.39.25.131	1
10.27.15.204	255.255.255.252	10.39.25.129	1
172.51.5.192	255.255.255.252	10.39.25.131	3
172.51.5.196	255.255.255.252	10.69.6.225	1
172.51.5.200	255.255.255.252	10.39.25.129	3
172.51.5.204	255.255.255.252	10.39.25.130	1
135.143.5.0	255.255.255.252	10.39.25.129	1
135.143.5.4	255.255.255.252	10.39.25.129	3
10.27.15.192	255.255.255.248	10.39.25.129	2
10.69.6.128	255.255.255.224	10.39.25.131	3
10.69.6.160	255.255.255.224	10.39.25.131	3
10.39.25.64	255.255.255.224	10.39.25.131	2
10.69.6.224	255.255.255.224	10.69.6.226	0
10.69.6.192	255.255.255.224	10.39.25.129	2
10.39.25.0	255.255.255.192	10.39.25.129	1
10.39.25.128	255.255.255.128	10.39.25.132	0
10.42.5.0	255.255.255.0	10.39.25.129	2
10.69.5.0	255.255.255.0	10.39.25.131	3
192.168.15.0	255.255.255.0	10.39.25.129	2

Cuadro 11: Tabla de ruteo H119.

2.11.   H130

Dirección	Máscara	Gateway	Métrica
10.27.15.200	255.255.255.252	10.42.5.2	3
10.27.15.204	255.255.255.252	10.42.5.2	1
172.51.5.192	255.255.255.252	10.42.5.2	5
172.51.5.196	255.255.255.252	10.42.5.2	4
172.51.5.200	255.255.255.252	10.42.5.2	2
172.51.5.204	255.255.255.252	10.42.5.2	3
135.143.5.0	255.255.255.252	10.42.5.2	2
135.143.5.4	255.255.255.252	135.143.5.5	0
10.27.15.192	255.255.255.248	10.42.5.2	1
10.69.6.128	255.255.255.224	10.42.5.2	5
10.69.6.160	255.255.255.224	10.42.5.2	5
10.39.25.64	255.255.255.224	10.42.5.2	4
10.69.6.224	255.255.255.224	10.42.5.2	3
10.69.6.192	255.255.255.224	10.42.5.2	1
10.39.25.0	255.255.255.192	10.42.5.2	2
10.39.25.128	255.255.255.128	10.42.5.2	2
10.42.5.0	255.255.255.0	10.42.5.1	0
10.69.5.0	255.255.255.0	10.42.5.2	5
192.168.15.0	255.255.255.0	10.42.5.2	1

Cuadro 12: Tabla de ruteo H130.

2.12.   H131

Dirección	Máscara	Gateway	Métrica
10.27.15.200	255.255.255.252	192.168.15.2	3
10.27.15.204	255.255.255.252	192.168.15.2	1
172.51.5.192	255.255.255.252	192.168.15.2	5
172.51.5.196	255.255.255.252	192.168.15.2	4
172.51.5.200	255.255.255.252	172.51.5.201	0
172.51.5.204	255.255.255.252	192.168.15.2	3
135.143.5.0	255.255.255.252	192.168.15.2	2
135.143.5.4	255.255.255.252	192.168.15.2	2
10.27.15.192	255.255.255.248	192.168.15.2	1
10.69.6.128	255.255.255.224	192.168.15.2	5
10.69.6.160	255.255.255.224	192.168.15.2	5
10.39.25.64	255.255.255.224	192.168.15.2	4
10.69.6.224	255.255.255.224	192.168.15.2	3
10.69.6.192	255.255.255.224	192.168.15.2	1
10.39.25.0	255.255.255.192	192.168.15.2	2
10.39.25.128	255.255.255.128	192.168.15.2	2
10.42.5.0	255.255.255.0	192.168.15.2	1
10.69.5.0	255.255.255.0	192.168.15.2	5
192.168.15.0	255.255.255.0	192.168.15.3	0

Cuadro 13: Tabla de ruteo H131.

2.13.   H132

Dirección	Máscara	Gateway	Métrica
10.27.15.200	255.255.255.252	10.27.15.205	2
10.27.15.204	255.255.255.252	10.27.15.206	0
172.51.5.192	255.255.255.252	10.27.15.205	4
172.51.5.196	255.255.255.252	10.27.15.205	3
172.51.5.200	255.255.255.252	192.168.15.3	1
172.51.5.204	255.255.255.252	10.27.15.205	2
135.143.5.0	255.255.255.252	10.27.15.205	1
135.143.5.4	255.255.255.252	10.42.5.1	1
10.27.15.192	255.255.255.248	10.27.15.193	0
10.69.6.128	255.255.255.224	10.27.15.205	4
10.69.6.160	255.255.255.224	10.27.15.205	4
10.39.25.64	255.255.255.224	10.27.15.205	3
10.69.6.224	255.255.255.224	10.27.15.205	2
10.69.6.192	255.255.255.224	10.69.6.193	0
10.39.25.0	255.255.255.192	10.27.15.205	1
10.39.25.128	255.255.255.128	10.27.15.205	1
10.42.5.0	255.255.255.0	10.42.5.2	0
10.69.5.0	255.255.255.0	10.27.15.205	4
192.168.15.0	255.255.255.0	192.168.15.2	0

Cuadro 14: Tabla de ruteo H132.

2.14.   Rutas alternativas

3.   DNS

4.   Simulación en la sala

5.   Conclusiones

Referencias

[1] RFC 950 - Internet Standard Subnetting Procedure.
http://www.packetizer.com/rfc/rfc950/