INSTITUTO FEDERAL DE
TELECOMUNICACIONES

No. Contrato: IFT/LPN/035/18.
Nombre: Servicio Administrado de Redes.
Memoria Técnica LAN Boston.

Versión:Final

Resumen del documento

Propósito

La finalidad de este documento es presentar la información de la solución implementada en el Instituto Federal de Telecomunicaciones en su servicio de red LAN, incluyendo las características, especificaciones, configuraciones y detalles sobre la instalación, con el objetivo de proporcionar una fuente de información útil para la administración de la infraestructura en cuestión

Este documento está dirigido a:

Audiencia	Propósito
IFT	Apoyo con las dependencias y aprobación
ECC	Presentar memoria técnica de la solución implementada

Tabla de Revisiones

Fecha	Autor	Descripción de Cambios
09/10/2018	Ing. Gustavo Rivera Miranda	Creación del Documento
10/10/2018	Ing. Peter Muñoz Hernández	Revisión del Documento
10/10/2018	Ing. Peter Muñoz Hernández	Modificación del Documento
11/10/2018	Ing. Ricardo Xavier García Jaén	Modificación del Documento
11/10/2018	Ing, Erick J Cruz Medina	Revisión del Documento
11/10/2018	Ing, Julio Guardado Santos	Revisión del Documento

Fecha	Autor	Descripción de Cambios
12/10/2018	Ing. Daniel Martínez Silva	Entrega de Memoria Técnica al IFT

Índice

Objetivos del proyecto

El Instituto Federal de Telecomunicaciones requiere la instalación de dos switches Core y 24 switches de acceso en sus instalaciones de Boston, para poder brindar servicio de red de datos en dichas instalaciones de IFT.

Especificaciones técnicas de los equipos instalados

Los equipos requeridos para la solución de red LAN se instalan y entregan en sitio. A continuación, se lista la descripción y modelos del equipamiento:

Descripción	Modelo	Numero de Parte
Core Switch Chassis	C9407R	C9407R
Tarjeta de 48 puertos de cobre	C9400	C9400-LC-48T
Tarjeta de 24 puertos de Fibra	C9400	C9400-LC-24XS
Switch de Acceso de 24 puertos	C9300-24UX-A	C9300-24UX-A
Switch de acceso de 48 puertos	C9300-48UXM-A	C9300-48UXM-A

En el ANEXO A se encuentran las especificaciones técnicas de los equipos instalados.

Inventario

Switches de Acceso

Núm.	Ubicación	Modelo	Número de Serie	MAC	Nombre	IOS	IP Administración
1	Sótano	C9300-48UXM -A	FCW2232L0KC	00b1.e355.1d00	SWA_SOT_BOSTON	Versión 16.06.04	192.168.13.241
2	PB	C9300-48UXM -A	FCW2232C0MA	00b1.e315.ae00	SWA_PB_BOSTON	Versión 16.06.04	192.168.13.242
3	PISO 1	C9300-48UXM -A	FCW2232G0K6	00b1.e355.1a80	SWA_P1_BOSTON	Versión 16.06.04	192.168.13.243
4	PISO 1	C9300-24UX -A	FCW2231L11M	04eb.40be.9680	SWA_P1_BOSTON	Versión 16.06.04	192.168.13.243
5	PISO 2	C9300-48UXM -A	FOC2231U0Z5	00d6.fed6.1b00	SWA_P2_BOSTON	Versión 16.06.04	192.168.13.244
6	PISO 2	C9300-48UXM -A	FCW2232L0KL	00b1.e355.2400	SWA_P2_BOSTON	Versión 16.06.04	192.168.13.244
7	PISO 2	C9300-48UXM -A	FCW2231L0TJ	00d6.fe84.9080	SWA_P2_BOSTON	Versión 16.06.04	192.168.13.244
8	PISO 3	C9300-48UXM -A	FCW2232L0J5	00b1.e315.ad80	SWA_P3_BOSTON	Versión 16.06.04	192.168.13.245
9	PISO 3	C9300-24UX -A	FOC2231U18M	00d6.fea2.a600	SWA_P3_BOSTON	Versión 16.06.04	192.168.13.245
10	PISO 4	C9300-48UXM -A	FOC2232U12V	00b1.e33a.ff80	SWA_P4_BOSTON	Versión 16.06.04	192.168.13.246
11	PISO 4	C9300-48UXM -A	FCW2232G0K3	00b1.e317.3c00	SWA_P4_BOSTON	Versión 16.06.04	192.168.13.246
12	PISO 5	C9300-48UXM -A	FCW2232G0EP	00d6.fe37.dd00	SWA_P5_BOSTON	Versión 16.06.04	192.168.13.247
13	PISO 5	C9300-48UXM -A	FCW2231G0T4	00d6.fed6.4e80	SWA_P5_BOSTON	Versión 16.06.04	192.168.13.247
14	PISO6	C9300-48UXM -A	FCW2232G0K8	00b1.e355.1b80	SWA_P6_BOSTON	Versión 16.06.04	192.168.13.248
15	PISO6	C9300-24UX -A	FOC2231U18L	00d6.fe7d.f880	SWA_P6_BOSTON	Versión 16.06.04	192.168.13.248
16	PISO 7	C9300-48UXM -A	FCW2232D0ZH	00b1.e33b.0200	SWA_P7_BOSTON	Versión 16.06.04	192.168.13.249
17	PISO 7	C9300-24UX -A	FOC2231U1AH	04eb.40be.9600	SWA_P7_BOSTON	Versión 16.06.04	192.168.13.249
18	PISO 8	C9300-48UXM -A	FCW2232L0HZ	00b1.e316.5200	SWA_P8_BOSTON	Versión 16.06.04	192.168.13.250
19	PISO 8	C9300-24UX -A	FCW2231D18B	04eb.40be.9580	SWA_P8_BOSTON	Versión 16.06.04	192.168.13.250
20	PISO 9	C9300-48UXM -A	FCW2232G0K4	dcf7.1901.bd00	SWA_P9_BOSTON	Versión 16.06.04	192.168.13.251
21	PISO 9	C9300-24UX -A	FCW2231D17H	00d6.fed7.2700	SWA_P9_BOSTON	Versión 16.06.04	192.168.13.251
22	PISO 10	C9300-48UXM -A	FCW2232C10S	00b1.e317.4380	SWA_P10_BOSTON	Versión 16.06.04	192.168.13.252
23	PISO 10	C9300-24UX -A	FCW2231G12G	00d6.fe7d.fa80	SWA_P10_BOSTON	Versión 16.06.04	192.168.13.252
24	PISO 11	C9300-48UXM -A	FCW2232G0KA	00aa.6e91.f680	SWA_P11_BOSTON	Versión 16.06.04	192.168.13.253

Switch Core

Núm.	Ubicación	Modelo	Número de Serie	MAC	NAME	IOS	IP Administración
1	PISO 2	C9407R	FXS2221Q356	00ea.bd16.9cf8	SWCORE_SWV_BOSTON	Versión 16.09.01	192.168.13.254
2	PISO 2	C9407R	FXS2221Q34S	bc26.c7d2.5860	SWCORE_SWV_BOSTON	Versión 16.09.01	192.168.13.254

GBICs

Núm.	Ubicación	PID	Número de Serie	Interfaz	Nombre de dispositivo	Descripción
1	Sótano	SFP-10G-SR	AVD22249B2G	Te1/1/1	SWA_SOT_BOSTON	SFP-10GBase-SR
2	Sótano	SFP-10G-SR	AVD22249D4N	Te1/1/2	SWA_SOT_BOSTON	SFP-10GBase-SR
3	PB	SFP-10G-SR	AVD22249D5W	Te1/1/1	SWA_PB_BOSTON	SFP-10GBase-SR
4	PB	SFP-10G-SR	AVD22249CG1	Te1/1/2	SWA_PB_BOSTON	SFP-10GBase-SR
5	PISO 1	SFP-10G-SR	AVD22249D5M	Te1/1/1	SWA_P1_BOSTON	SFP-10GBase-SR
6	PISO 1	SFP-10G-SR	AVD22249D5N	Te2/1/1	SWA_P1_BOSTON	SFP-10GBase-SR
7	PISO 2	SFP-10G-SR	AVD22249D58	Te1/1/1	SWA_P2_BOSTON	SFP-10GBase-SR
8	PISO 2	SFP-10G-SR	AVD22249D3H	Te2/1/1	SWA_P2_BOSTON	SFP-10GBase-SR
9	PISO 3	SFP-10G-SR	AVD22249B31	Te1/1/1	SWA_P3_BOSTON	SFP-10GBase-SR
10	PISO 3	SFP-10G-SR	AVD22249D62	Te2/1/1	SWA_P3_BOSTON	SFP-10GBase-SR
11	PISO 4	SFP-10G-SR	AVD22249D34	Te1/1/1	SWA_P4_BOSTON	SFP-10GBase-SR
12	PISO 4	SFP-10G-SR	AVD22249D5Y	Te2/1/1	SWA_P4_BOSTON	SFP-10GBase-SR
13	PISO 5	SFP-10G-SR	AVD22249B2E	Te1/1/1	SWA_P5_BOSTON	SFP-10GBase-SR
14	PISO 5	SFP-10G-SR	AVD22249B33	Te2/1/1	SWA_P5_BOSTON	SFP-10GBase-SR
15	PISO 6	SFP-10G-SR	AVD22249D33	Te1/1/1	SWA_P6_BOSTON	SFP-10GBase-SR
16	PISO 6	SFP-10G-SR	AVD22249B2N	Te2/1/1	SWA_P6_BOSTON	SFP-10GBase-SR
17	PISO 7	SFP-10G-SR	AVD22249746	Te1/1/1	SWA_P7_BOSTON	SFP-10GBase-SR
18	PISO 7	SFP-10G-SR	AVD22249D37	Te2/1/1	SWA_P7_BOSTON	SFP-10GBase-SR
19	PISO 8	SFP-10G-SR	AVD22249GJB	Te1/1/1	SWA_P8_BOSTON	SFP-10GBase-SR
20	PISO 8	SFP-10G-SR	AVD22249D4Z	Te2/1/1	SWA_P8_BOSTON	SFP-10GBase-SR
21	PISO 9	SFP-10G-SR	AVD22249B2Y	Te1/1/1	SWA_P9_BOSTON	SFP-10GBase-SR
22	PISO 9	SFP-10G-SR	AVD22249D5B	Te2/1/1	SWA_P9_BOSTON	SFP-10GBase-SR
23	PISO 10	SFP-10G-SR	AVD22249D5H	Te1/1/1	SWA_P10_BOSTON	SFP-10GBase-SR
24	PISO 10	SFP-10G-SR	AVD22249D5A	Te2/1/1	SWA_P10_BOSTON	SFP-10GBase-SR
25	PISO 11	SFP-10G-SR	AVD222491T6	Te1/1/1	SWA_P11_BOSTON	SFP-10GBase-SR
26	PISO 11	SFP-10G-SR	AVD22249B36	Te1/1/2	SWA_P11_BOSTON	SFP-10GBase-SR
27	PISO 2	SFP-10G-SR	AVD22249B38	**Te**1/5/0/1	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
28	PISO 2	SFP-10G-SR	AVD22249D31	Te1/5/0/2	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
29	PISO 2	SFP-10G-SR	AVD22249D55	Te1/5/0/3	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
30	PISO 2	SFP-10G-SR	AVD22249D39	Te1/5/0/4	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
31	PISO 2	SFP-10G-SR	AVD22249GJN	Te1/5/0/5	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
32	PISO 2	SFP-10G-SR	AVD22249GJ9	Te1/5/0/6	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
33	PISO 2	SFP-10G-SR	AVD22249B5A	Te1/5/0/7	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
34	PISO 2	SFP-10G-SR	AVD22249D5G	Te1/5/0/8	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
35	PISO 2	SFP-10G-SR	AVD22249D45	Te1/5/0/9	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
36	PISO 2	SFP-10G-SR	AVD22249GJP	Te1/5/0/10	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
37	PISO 2	SFP-10G-SR	AVD22249CF1	Te1/5/0/11	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
38	PISO 2	SFP-10G-SR	AVD22249B2W	Te1/5/0/12	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
39	PISO 2	SFP-10G-SR	AVD22249D3U	Te1/5/0/13	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
40	PISO 2	SFP-10G-SR	AVD222492RJ	Te1/5/0/14	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
41	PISO 2	SFP-10G-SR	AVD22249CF0	Te1/5/0/15	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
42	PISO 2	SFP-10G-SR	AVD22249B2R	Te1/5/0/16	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
43	PISO 2	GLC-SX-MMD	FNS222215XJ	Te1/5/0/19	SWCORE_SWV_BOSTON	GE SX
44	PISO 2	GLC-SX-MMD	FNS222217LY	Te1/5/0/22	SWCORE_SWV_BOSTON	GE SX
45	PISO 2	SFP-10G-SR	AVD22249B2H	Te1/5/0/24	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
46	PISO 2	SFP-10G-SR	AVD22249B2P	Te1/6/0/24	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
47	PISO 2	SFP-10G-SR	AVD222492L7	Te1/3/0/1	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
48	PISO 2	SFP-10G-SR	AVD22249GJ4	Te1/3/0/2	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
49	PISO 2	SFP-10G-SR	AVD22249D5K	Te1/3/0/3	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
50	PISO 2	SFP-10G-SR	AVD22249GHV	Te1/3/0/4	SWCORE_SWV_BOSTON	SFP+ 10GBASE-SR
51	PISO 2	10G BASE-ER	AVD22249D5T	Po1	WLC_IFT_BOSTON_PRIMARIA	SFP+ 10GBASE-SR
52	PISO 2	10G BASE-ER	AVD22249D52	Po2	WLC_IFT_BOSTON_PRIMARIA	SFP+ 10GBASE-SR
53	PISO 2	10G BASE-ER	No disponible	Po1	WLC_IFT_BOSTON_SECUNDARIA	SFP+ 10GBASE-SR
54	PISO 2	10G BASE-ER	No disponible	Po2	WLC_IFT_BOSTON_SECUNDARIA	SFP+ 10GBASE-SR

Fuentes

No	Ubicación	PID	Número de Serie	Nombre de dispositivo	Descripción
1	Sótano	PWR-C1-1100WAC	DTN2218V2R0	SWA_SOT_BOSTON	Power Supply A
2	Sótano	PWR-C1-1100WAC	DTN2218V2R4	SWA_SOT_BOSTON	Power Supply B
3	PB	PWR-C1-1100WAC	DTN2218V206	SWA_PB_BOSTON	Power Supply A
4	PB	PWR-C1-1100WAC	LIT222334Y6	SWA_PB_BOSTON	Power Supply B
5	PISO 1	PWR-C1-1100WAC	DTN2218V202	SWA_P1_BOSTON	Power Supply A
6	PISO 1	PWR-C1-1100WAC	DTN2218V200	SWA_P1_BOSTON	Power Supply B
7	PISO 1	PWR-C1-1100WAC	LIT222334YK	SWA_P1_BOSTON	Power Supply A
8	PISO 1	PWR-C1-1100WAC	LIT222334WU	SWA_P1_BOSTON	Power Supply B
9	PISO 2	PWR-C1-1100WAC	DTN2218V1VN	SWA_P2_BOSTON	Power Supply A
10	PISO 2	PWR-C1-1100WAC	No disponible	SWA_P2_BOSTON	Power Supply B
11	PISO 2	PWR-C1-1100WAC	DTN2218V1YW	SWA_P2_BOSTON	Power Supply A
12	PISO 2	PWR-C1-1100WAC	No disponible	SWA_P2_BOSTON	Power Supply B
13	PISO 2	PWR-C1-1100WAC	DTN2218V205	SWA_P2_BOSTON	Power Supply A
14	PISO 2	PWR-C1-1100WAC	No disponible	SWA_P2_BOSTON	Power Supply B
15	PISO 3	PWR-C1-1100WAC	DTN2218V1YK	SWA_P3_BOSTON	Power Supply A
16	PISO 3	PWR-C1-1100WAC	DTN2218V2QY	SWA_P3_BOSTON	Power Supply B
17	PISO 3	PWR-C1-1100WAC	LIT222334XD	SWA_P3_BOSTON	Power Supply A
18	PISO 3	PWR-C1-1100WAC	LIT222334WY	SWA_P3_BOSTON	Power Supply B
19	PISO 4	PWR-C1-1100WAC	DTN2218V2R3	SWA_P4_BOSTON	Power Supply A
20	PISO 4	PWR-C1-1100WAC	DTN2218V1YU	SWA_P4_BOSTON	Power Supply B
21	PISO 4	PWR-C1-1100WAC	DTN2218V1ZZ	SWA_P4_BOSTON	Power Supply A
22	PISO 4	PWR-C1-1100WAC	DTN2218V2QZ	SWA_P4_BOSTON	Power Supply B
23	PISO 5	PWR-C1-1100WAC	DTN2218V20A	SWA_P5_BOSTON	Power Supply A
24	PISO 5	PWR-C1-1100WAC	DTN2218V20C	SWA_P5_BOSTON	Power Supply B
25	PISO 5	PWR-C1-1100WAC	DTN2218V1VW	SWA_P5_BOSTON	Power Supply A
26	PISO 5	PWR-C1-1100WAC	DTN2218V1VZ	SWA_P5_BOSTON	Power Supply B
27	PISO 6	PWR-C1-1100WAC	DTN2218V1YR	SWA_P6_BOSTON	Power Supply A
28	PISO 6	PWR-C1-1100WAC	DTN2218V2R2	SWA_P6_BOSTON	Power Supply B
29	PISO 6	PWR-C1-1100WAC	LIT222334SA	SWA_P6_BOSTON	Power Supply A
30	PISO 6	PWR-C1-1100WAC	DTN2218V1YV	SWA_P6_BOSTON	Power Supply B
31	PISO 7	PWR-C1-1100WAC	DTN2218V207	SWA_P7_BOSTON	Power Supply A
32	PISO 7	PWR-C1-1100WAC	DTN2218V204	SWA_P7_BOSTON	Power Supply B
33	PISO 7	PWR-C1-1100WAC	DTN2218V1YM	SWA_P7_BOSTON	Power Supply A
34	PISO 7	PWR-C1-1100WAC	DTN2218V1YL	SWA_P7_BOSTON	Power Supply B
35	PISO 8	PWR-C1-1100WAC	LIT222334X2	SWA_P8_BOSTON	Power Supply A
36	PISO 8	PWR-C1-1100WAC	LIT222334VD	SWA_P8_BOSTON	Power Supply B
37	PISO 8	PWR-C1-1100WAC	LIT22233FFP	SWA_P8_BOSTON	Power Supply A
38	PISO 8	PWR-C1-1100WAC	DTN2218V1YS	SWA_P8_BOSTON	Power Supply B
39	PISO 9	PWR-C1-1100WAC	DTN2218V208	SWA_P9_BOSTON	Power Supply A
40	PISO 9	PWR-C1-1100WAC	DTN2218V20B	SWA_P9_BOSTON	Power Supply B
41	PISO 9	PWR-C1-1100WAC	LIT222334SJ	SWA_P9_BOSTON	Power Supply A
42	PISO 9	PWR-C1-1100WAC	LIT222334Y5	SWA_P9_BOSTON	Power Supply B
43	PISO 10	PWR-C1-1100WAC	DTN2218V203	SWA_P10_BOSTON	Power Supply A
44	PISO 10	PWR-C1-1100WAC	DTN2218V201	SWA_P10_BOSTON	Power Supply B
45	PISO 10	PWR-C1-1100WAC	LIT222334X5	SWA_P10_BOSTON	Power Supply A
46	PISO 10	PWR-C1-1100WAC	LIT222334XR	SWA_P10_BOSTON	Power Supply B
47	PISO 11	PWR-C1-1100WAC	DTN2218V2R1	SWA_P11_BOSTON	Power Supply A
48	PISO 11	PWR-C1-1100WAC	DTN2218V1YJ	SWA_P11_BOSTON	Power Supply B
49	PISO 2	C9400-PWR-3200AC	DTM222801H9	SWCORE_SWV_BOSTON	3200W AC Power Supply
50	PISO 2	C9400-PWR-3200AC	DTM222802ZZ	SWCORE_SWV_BOSTON	3200W AC Power Supply
51	PISO 2	C9400-PWR-3200AC	DTM222801SK	SWCORE_SWV_BOSTON	3200W AC Power Supply
52	PISO 2	C9400-PWR-3200AC	DTM222801K5	SWCORE_SWV_BOSTON	3200W AC Power Supply

53	PISO 2	C9400-PWR-3200AC	DTM222802Z4	SWCORE_SWV_BOSTON	3200W AC Power Supply
54	PISO 2	C9400-PWR-3200AC	DTM222802MS	SWCORE_SWV_BOSTON	3200W AC Power Supply
55	PISO 2	C9400-PWR-3200AC	DTM222801H4	SWCORE_SWV_BOSTON	3200W AC Power Supply
56	PISO 2	C9400-PWR-3200AC	DTM222802V4	SWCORE_SWV_BOSTON	3200W AC Power Supply
57	PISO 2	C9400-PWR-3200AC	DTM222801T6	SWCORE_SWV_BOSTON	3200W AC Power Supply
58	PISO 2	C9400-PWR-3200AC	DTM222802ZT	SWCORE_SWV_BOSTON	3200W AC Power Supply
59	PISO 2	C9400-PWR-3200AC	DTM222802US	SWCORE_SWV_BOSTON	3200W AC Power Supply
60	PISO 2	C9400-PWR-3200AC	DTM222802X7	SWCORE_SWV_BOSTON	3200W AC Power Supply
61	PISO 2	C9400-PWR-3200AC	DTM222802UU	SWCORE_SWV_BOSTON	3200W AC Power Supply
62	PISO 2	C9400-PWR-3200AC	DTM222801H5	SWCORE_SWV_BOSTON	3200W AC Power Supply
63	PISO 2	C9400-PWR-3200AC	DTM222801GW	SWCORE_SWV_BOSTON	3200W AC Power Supply
64	PISO 2	C9400-PWR-3200AC	DTM222802XQ	SWCORE_SWV_BOSTON	3200W AC Power Supply

Tarjetas

No	Ubicación	PID	Número de Serie	Nombre de dispositivo	Descripción
1	Sótano	C9300-NM-8X	FOC22300K21	SWA_SOT_BOSTON	8x10G Uplink Module
2	PB	C9300-NM-8X	FOC22300LR2	SWA_PB_BOSTON	8x10G Uplink Module
3	PISO 1	C9300-NM-8X	FOC22300J7M	SWA_P1_BOSTON	8x10G Uplink Module
4	PISO 1	C9300-NM-8X	FOC22300N4G	SWA_P1_BOSTON	8x10G Uplink Module
5	PISO 2	C9300-NM-8X	FOC22300H4N	SWA_P2_BOSTON	8x10G Uplink Module
6	PISO 2	C9300-NM-8X	FOC22300N34	SWA_P2_BOSTON	8x10G Uplink Module
7	PISO 2	C9300-NM-8X	FOC22300L1R	SWA_P2_BOSTON	8x10G Uplink Module
8	PISO 3	C9300-NM-8X	FOC22300LJR	SWA_P3_BOSTON	8x10G Uplink Module
9	PISO 3	C9300-NM-8X	FOC22300LZN	SWA_P3_BOSTON	8x10G Uplink Module
10	PISO 4	C9300-NM-8X	FOC22163S0K	SWA_P4_BOSTON	8x10G Uplink Module
11	PISO 4	C9300-NM-8X	FOC22300J21	SWA_P4_BOSTON	8x10G Uplink Module
12	PISO 5	C9300-NM-8X	FOC22300L8P	SWA_P5_BOSTON	8x10G Uplink Module
13	PISO 5	C9300-NM-8X	FOC22300L2B	SWA_P5_BOSTON	8x10G Uplink Module
14	PISO 6	C9300-NM-8X	FOC22163ANP	SWA_P6_BOSTON	8x10G Uplink Module
15	PISO 6	C9300-NM-8X	FOC222896N1	SWA_P6_BOSTON	8x10G Uplink Module
16	PISO 7	C9300-NM-8X	FOC222894DT	SWA_P7_BOSTON	8x10G Uplink Module
17	PISO 7	C9300-NM-8X	FOC22289686	SWA_P7_BOSTON	8x10G Uplink Module
18	PISO 8	C9300-NM-8X	FOC22300J8S	SWA_P8_BOSTON	8x10G Uplink Module
19	PISO 8	C9300-NM-8X	FOC222894ZN	SWA_P8_BOSTON	8x10G Uplink Module
20	PISO 9	C9300-NM-8X	FOC22300LX2	SWA_P9_BOSTON	8x10G Uplink Module
21	PISO 9	C9300-NM-8X	FOC22289865	SWA_P9_BOSTON	8x10G Uplink Module
22	PISO 10	C9300-NM-8X	FOC22163BJA	SWA_P10_BOSTON	8x10G Uplink Module
23	PISO 10	C9300-NM-8X	FOC22300MKV	SWA_P10_BOSTON	8x10G Uplink Module
24	PISO 11	C9300-NM-8X	FOC22300K1P	SWA_P11_BOSTON	8x10G Uplink Module
25	PISO 2	C9400-LC-48T	JAE22280CCM	SWCORE_SWV_BOSTON	48-Port 10/100/1000 (RJ-45)
26	PISO 2	C9400-LC-24XS	JAE22300NC4	SWCORE_SWV_BOSTON	24-Port 10 Gigabit Ethernet (SFP+)
27	PISO 2	C9400-LC-24XS	JAE223002KX	SWCORE_SWV_BOSTON	24-Port 10 Gigabit Ethernet (SFP+)
28	PISO 2	C9400-SUP-1XL	JAE22300GE1	SWCORE_SWV_BOSTON	Supervisor 1 XL Module
29	PISO 2	C9400-LC-48T	JAE22250GLV	SWCORE_SWV_BOSTON	48-Port 10/100/1000 (RJ-45)
30	PISO 2	C9400-LC-24XS	JAE22290B4V	SWCORE_SWV_BOSTON	24-Port 10 Gigabit Ethernet (SFP+)
31	PISO 2	C9400-LC-24XS	JAE22290B2Z	SWCORE_SWV_BOSTON	24-Port 10 Gigabit Ethernet (SFP+)
32	PISO 2	C9400-SUP-1XL	JAE223002CD	SWCORE_SWV_BOSTON	Supervisor 1 XL Module

Descripción de la solución

Para llevar a cabo la implementación de la red en el Instituto Federal de Telecomunicaciones, fue utilizando y entregado el siguiente equipamiento:

- 2 switches CORE Cisco System Modelo 9407 (Chasis)
  - ✓ 2 tarjetas Cisco Catalyst 9400 Series 48-Port 10/100/1000 (RJ-45)
  - ✓ 4 tarjetas Cisco Catalyst 9400 Series 24-Port 10 Gigabit Ethernet (SFP+)
- 17 switches de acceso Cisco System Modelo C9300-48UXM-A de 48 puertos
- 7 switches de acceso Cisco modelo C9300-24UX-A de 24 puertos

En la red se maneja un total de 102 VLANs en operación. De estas 8 son utilizadas en la red WIFI, una para videoconferencia, 2 para impresoras, 8 para telefonía VoIP, 3 para monitoreo, una para CTTV, una como VLAN de administración (diferente de la VLAN 1), y el resto con otros objetivos.

Se utiliza como protocolo para evitar “switch loops” el rapid-PVST. Para la administración remota el protocolo que se implementa es el SSH versión 2. No se ocupan protocolos dinámicos para el enrutamiento, en su lugar se configura ruteo estático. También son implementadas algunas PBR para mayor calidad de servicio, así como configuraciones básicas de seguridad y buenas prácticas.

La topología que se utiliza es de estrella, donde todos los switches van conectados a un switch CORE. El centro de la comunicación lo formarían dos switches CORE interconectados entre sí. Para lograr mayor ancho de banda en la comunicación entre switches se implementan “port-channels”, donde la cantidad de puertos usados va de acuerdo con el volumen de tráfico que se maneje en esa parte de la red.

En cada IDF donde existe más de un switch se utiliza la tecnología de “virtual stack”, de tal forma que el respaldo de la configuración realizada quede salvaguardado en todos los elementos del stack. Físicamente existen varios dispositivos en el rack, pero lógicamente funcionan como uno solo, y cada uno de ellos es visualizado como un slot. Si uno de ellos llegara a fallar solo se afectarían los usuarios y servicios que se encuentran conectados físicamente a él. Esta característica brinda flexibilidad, redundancia y simplifica la administración de la red LAN.

Para más información se puede consultar el anexo de configuración y los diagramas.

Implementación física

La implementación se realizó en 12 pisos de la edificación, quedando todos los IDF como se muestra en las siguientes figuras:

SÓTANO

PLANTA BAJA

PISO 1

PISO 2

PISO 3

PISO 4

PISO 5

PISO 6

PISO 7

PISO 8

PISO 9

PISO 10

PISO 11

Configuración de los equipos

En el ANEXO B se encuentran las configuraciones de los equipos antes mencionados.

Pruebas de funcionalidad

Se comprueba la conectividad de cada uno de los switches con las localidades de Iztapalapa y Rouz, así como el acceso a internet.

```
SWA_SOT_BOSTON#!SW BOSTON A CORE IZTAPALAPA
SWA_SOT_BOSTON#ping 192.168.27.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.27.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3 ms
SWA_SOT_BOSTON#!SW BOSTON A CORE ROUZ
SWA_SOT_BOSTON#ping 192.168.17.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.17.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/2/10 ms
```

```
SWA_PB_BOSTON#!SW BOSTON A CORE IZTAPALAPA
SWA_PB_BOSTON#ping 192.168.27.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.27.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3 ms
SWA_PB_BOSTON#!SW BOSTON A CORE ROUZ
SWA_PB_BOSTON#ping 192.168.17.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.17.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/2/3 ms
```

```
SWA_P1_BOSTON#!SW BOSTON A CORE IZTAPALAPA
SWA_P1_BOSTON#ping 192.168.27.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.27.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/4 ms
SWA_P1_BOSTON#!SW BOSTON A CORE ROUZ
SWA_P1_BOSTON#ping 192.168.17.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.17.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/2/3 ms
```

```
SWA_P2_BOSTON#!SW BOSTON A CORE IZTAPALAPA
SWA_P2_BOSTON#ping 192.168.27.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.27.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/4 ms
SWA_P2_BOSTON#!SW BOSTON A CORE ROUZ
SWA_P2_BOSTON#ping 192.168.17.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.17.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3 ms
```

```
SWA_P3_BOSTON#!SW BOSTON A CORE IZTAPALAPA
SWA_P3_BOSTON#ping 192.168.27.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.27.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/2/3 ms
SWA_P3_BOSTON#!SW BOSTON A CORE ROUZ
SWA_P3_BOSTON#ping 192.168.17.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.17.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/2/3 ms
```

```
SWA_P4_BOSTON#!SW BOSTON A CORE IZTAPALAPA
SWA_P4_BOSTON#ping 192.168.27.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.27.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3 ms
SWA_P4_BOSTON#
SWA_P4_BOSTON#!SW BOSTON A CORE ROUZ
SWA_P4_BOSTON#ping 192.168.17.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.17.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/2/3 ms
```

```
SWA_P5_BOSTON#!SW BOSTON A CORE IZTAPALAPA
SWA_P5_BOSTON#ping 192.168.27.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.27.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3 ms
SWA_P5_BOSTON#!SW BOSTON A CORE ROUZ
SWA_P5_BOSTON#ping 192.168.17.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.17.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3 ms
```

```
SWA_P6_BOSTON#!SW BOSTON A CORE IZTAPALAPA
SWA_P6_BOSTON#ping 192.168.27.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.27.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3 ms
SWA_P6_BOSTON#!SW BOSTON A CORE ROUZ
SWA_P6_BOSTON#ping 192.168.17.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.17.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/2/3 ms
```

```
SWA_P7_BOSTON#ping 192.168.27.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.27.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3 ms
SWA_P7_BOSTON#!SW BOSTON A CORE ROUZ
SWA_P7_BOSTON#ping 192.168.17.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.17.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/2/3 ms
```

```
SWA_P8_BOSTON#!SW BOSTON A CORE IZTAPALAPA
SWA_P8_BOSTON#ping 192.168.27.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.27.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/4 ms
SWA_P8_BOSTON#!SW BOSTON A CORE ROUZ
SWA_P8_BOSTON#ping 192.168.17.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.17.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/2/3 ms
```

```
SWA_P9_BOSTON#!SW BOSTON A CORE IZTAPALAPA
SWA_P9_BOSTON#ping 192.168.27.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.27.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/4 ms
SWA_P9_BOSTON#!SW BOSTON A CORE ROUZ
SWA_P9_BOSTON#ping 192.168.17.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.17.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/2/3 ms
```

```
SWA_P10_BOSTON#!SW BOSTON A CORE IZTAPALAPA
SWA_P10_BOSTON#ping 192.168.27.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.27.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3 ms
SWA_P10_BOSTON#!SW BOSTON A CORE ROUZ
SWA_P10_BOSTON#ping 192.168.17.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.17.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/2/13 ms
```

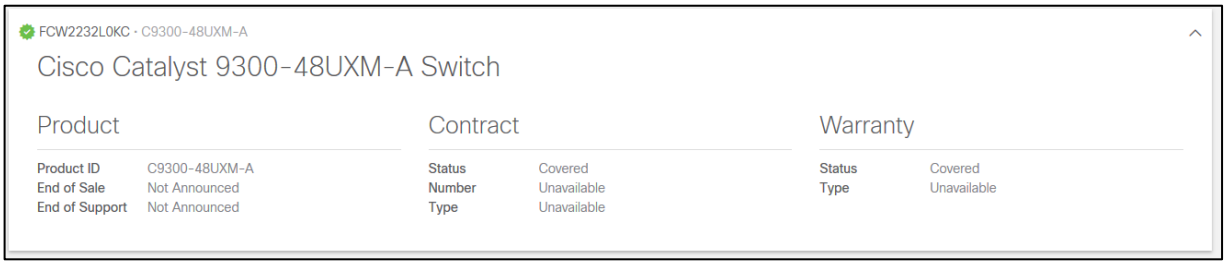
```
SWA_P11_BOSTON#!SW BOSTON A CORE IZTAPALAPA
SWA_P11_BOSTON#ping 192.168.27.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.27.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/2/4 ms
SWA_P11_BOSTON#!SW BOSTON A CORE ROUZ
SWA_P11_BOSTON#ping 192.168.17.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.17.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/2/3 ms
```

```
SWCORE_SWV_BOSTON#!CORE BOSTON A CORE ROUZ
SWCORE_SWV_BOSTON#ping 192.168.17.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.17.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/1/3 ms
SWCORE_SWV_BOSTON#!CORE BOSTON A CORE IZT
SWCORE_SWV_BOSTON#ping 192.168.27.254 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.27.254, timeout is 2 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 2/2/3 ms
SWCORE_SWV_BOSTON#!CORE BOSTON A INTERNET
SWCORE_SWV_BOSTON#ping 4.2.2.2 SOURCE Vlan550 R 100
Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 4.2.2.2, timeout is 2 seconds:
Packet sent with a source address of 10.34.20.14
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 33/33/34 ms
```

Credenciales de acceso

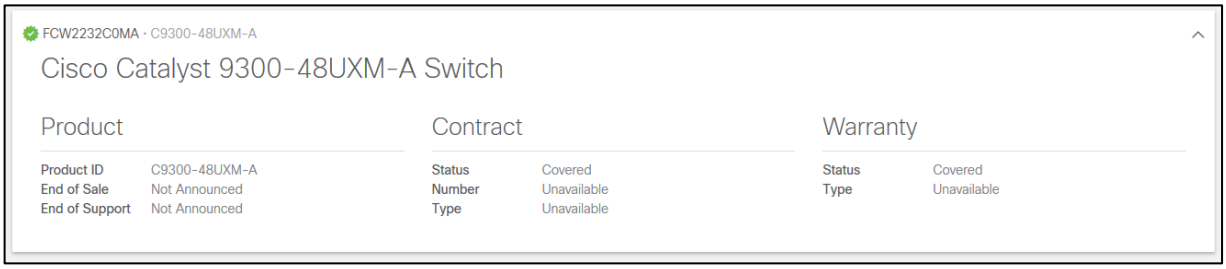
Se entregan en un CD credenciales de acceso.

Licenciamiento y soporte


FCW2232L0KC · C9300-48UXM-A

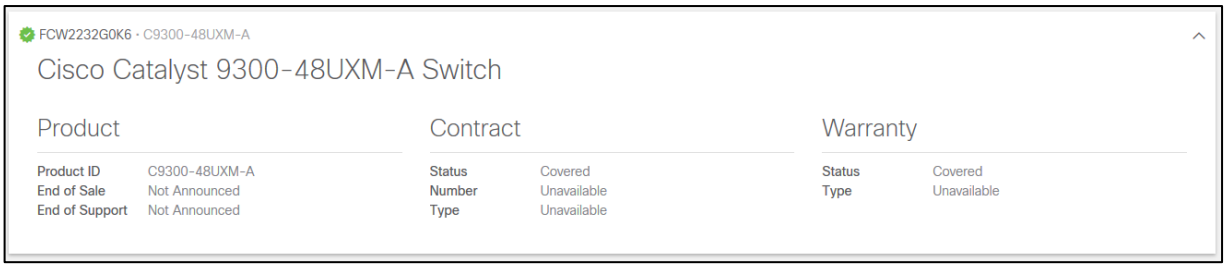
Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		


FCW2232C0MA · C9300-48UXM-A

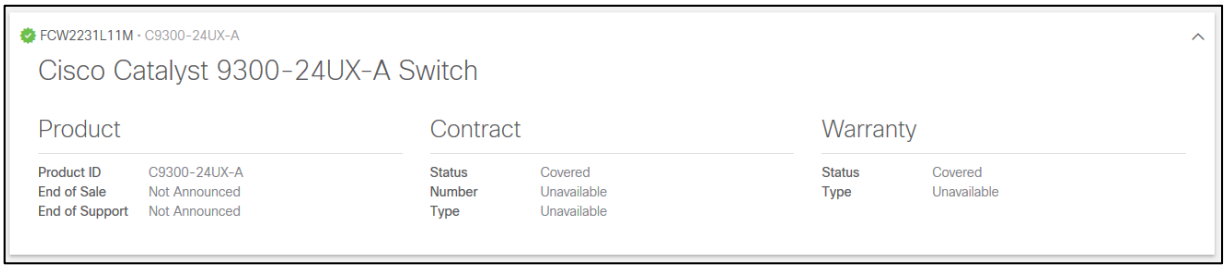
Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		


FCW2232G0K6 · C9300-48UXM-A

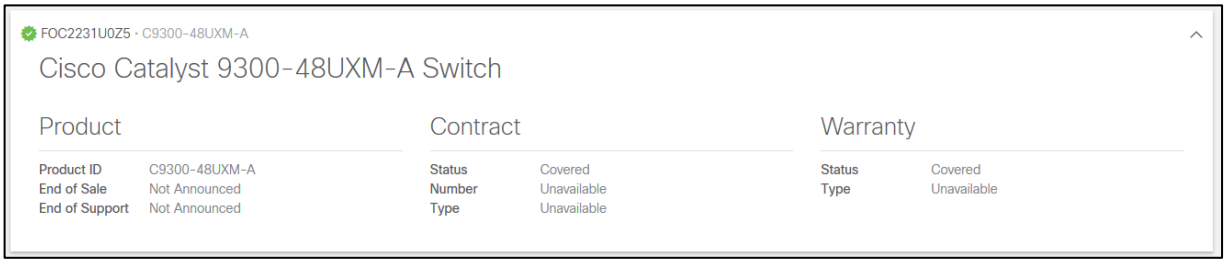
Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		


FCW2231L11M · C9300-24UX-A

Cisco Catalyst 9300-24UX-A Switch

Product		Contract		Warranty	
Product ID	C9300-24UX-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		


FOC2231U0Z5 · C9300-48UXM-A

Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FCW2232L0KL · C9300-48UXM-A

Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FCW2231L0TJ · C9300-48UXM-A

Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FOC2231U18M · C9300-24UX-A

Cisco Catalyst 9300-24UX-A Switch

Product		Contract		Warranty	
Product ID	C9300-24UX-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FOC2232U12V · C9300-48UXM-A

Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FCW2232G0K3 · C9300-48UXM-A

Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FCW2232G0EP · C9300-48UXM-A

Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FCW2231G0T4 · C9300-48UXM-A

Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FCW2232G0K8 · C9300-48UXM-A

Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FOC2231U18L · C9300-24UX-A

Cisco Catalyst 9300-24UX-A Switch

Product		Contract		Warranty	
Product ID	C9300-24UX-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FCW2232D0ZH · C9300-48UXM-A

Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FOC2231U1AH · C9300-24UX-A

Cisco Catalyst 9300-24UX-A Switch

Product		Contract		Warranty	
Product ID	C9300-24UX-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FCW2232L0HZ · C9300-48UXM-A

Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FCW2231D18B · C9300-24UX-A

Cisco Catalyst 9300-24UX-A Switch

Product		Contract		Warranty	
Product ID	C9300-24UX-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FCW2232G0K4 · C9300-48UXM-A

Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FCW2231D17H · C9300-24UX-A

Cisco Catalyst 9300-24UX-A Switch

Product		Contract		Warranty	
Product ID	C9300-24UX-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FCW2232C10S · C9300-48UXM-A

Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FCW2231G12G · C9300-24UX-A

Cisco Catalyst 9300-24UX-A Switch

Product		Contract		Warranty	
Product ID	C9300-24UX-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

FCW2232G0KA · C9300-48UXM-A

Cisco Catalyst 9300-48UXM-A Switch

Product		Contract		Warranty	
Product ID	C9300-48UXM-A	Status	Covered	Status	Covered
End of Sale	Not Announced	Number	Unavailable	Type	Unavailable
End of Support	Not Announced	Type	Unavailable		

```
SWA_SOT_BOSTON#show license right-to-use
Slot#       License Name           Type    Period left
-------------------------------------------------------
    1  network-advantage      Permanent       Lifetime
    1       dna-advantage  Subscription  CSSM Managed
-------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription
```

```
SWA_PB_BOSTON#show license right-to-use
Slot#       License Name           Type    Period left
-------------------------------------------------------
    1  network-advantage      Permanent       Lifetime
    1       dna-advantage  Subscription  CSSM Managed
-------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription
```

```
SWA_P1_BOSTON#sh license right-to-use
Slot#       License Name           Type   Period left
-------------------------------------------------------
    1  network-advantage     Permanent      Lifetime
    1      dna-advantage  Subscription  CSSM Managed
-------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription


Slot#       License Name           Type   Period left
-------------------------------------------------------
    2  network-advantage     Permanent      Lifetime
    2      dna-advantage  Subscription  CSSM Managed
-------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription
```

```
SWA_P2_BOSTON#show license right-to-use
Slot#       License Name           Type   Period left
-------------------------------------------------------
    1  network-advantage     Permanent      Lifetime
    1      dna-advantage  Subscription  CSSM Managed
-------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription


Slot#       License Name           Type   Period left
-------------------------------------------------------
    2  network-advantage     Permanent      Lifetime
    2      dna-advantage  Subscription  CSSM Managed
-------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription


Slot#       License Name           Type   Period left
-------------------------------------------------------
    3  network-advantage     Permanent      Lifetime
    3      dna-advantage  Subscription  CSSM Managed
-------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription
```

```
SWA_P3_BOSTON#show license right-to-use
Slot#       License Name           Type    Period left
--------------------------------------------------------
    1  network-advantage      Permanent       Lifetime
    1      dna-advantage   Subscription   CSSM Managed
--------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription


Slot#       License Name           Type    Period left
--------------------------------------------------------
    2  network-advantage      Permanent       Lifetime
    2      dna-advantage   Subscription   CSSM Managed
--------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription
```

```
SWA_P4_BOSTON#show license right-to-use
Slot#       License Name           Type    Period left
--------------------------------------------------------
    1  network-advantage      Permanent       Lifetime
    1      dna-advantage   Subscription   CSSM Managed
--------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription


Slot#       License Name           Type    Period left
--------------------------------------------------------
    2  network-advantage      Permanent       Lifetime
    2      dna-advantage   Subscription   CSSM Managed
--------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription
```

```
SWA_P5_BOSTON#show license right-to-use
Slot#       License Name           Type    Period left
--------------------------------------------------------
    1  network-advantage      Permanent       Lifetime
    1      dna-advantage   Subscription   CSSM Managed
--------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription


Slot#       License Name           Type    Period left
--------------------------------------------------------
    2  network-advantage      Permanent       Lifetime
    2      dna-advantage   Subscription   CSSM Managed
--------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription
```

```
SWA_P6_BOSTON#show license right-to-use
Slot#       License Name          Type   Period left
-------------------------------------------------------
    1  network-advantage     Permanent      Lifetime
    1      dna-advantage  Subscription  CSSM Managed
-------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription


Slot#       License Name          Type   Period left
-------------------------------------------------------
    2  network-advantage     Permanent      Lifetime
    2      dna-advantage  Subscription  CSSM Managed
-------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription
```

```
SWA_P7_BOSTON#show license right-to-use
Slot#       License Name          Type   Period left
-------------------------------------------------------
    1  network-advantage     Permanent      Lifetime
    1      dna-advantage  Subscription  CSSM Managed
-------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription


Slot#       License Name          Type   Period left
-------------------------------------------------------
    2  network-advantage     Permanent      Lifetime
    2      dna-advantage  Subscription  CSSM Managed
-------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription
```

```
SWA_P8_BOSTON#show license right-to-use
Slot#       License Name          Type   Period left
-------------------------------------------------------
    1  network-advantage     Permanent      Lifetime
    1      dna-advantage  Subscription  CSSM Managed
-------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription


Slot#       License Name          Type   Period left
-------------------------------------------------------
    2  network-advantage     Permanent      Lifetime
    2      dna-advantage  Subscription  CSSM Managed
-------------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription
```

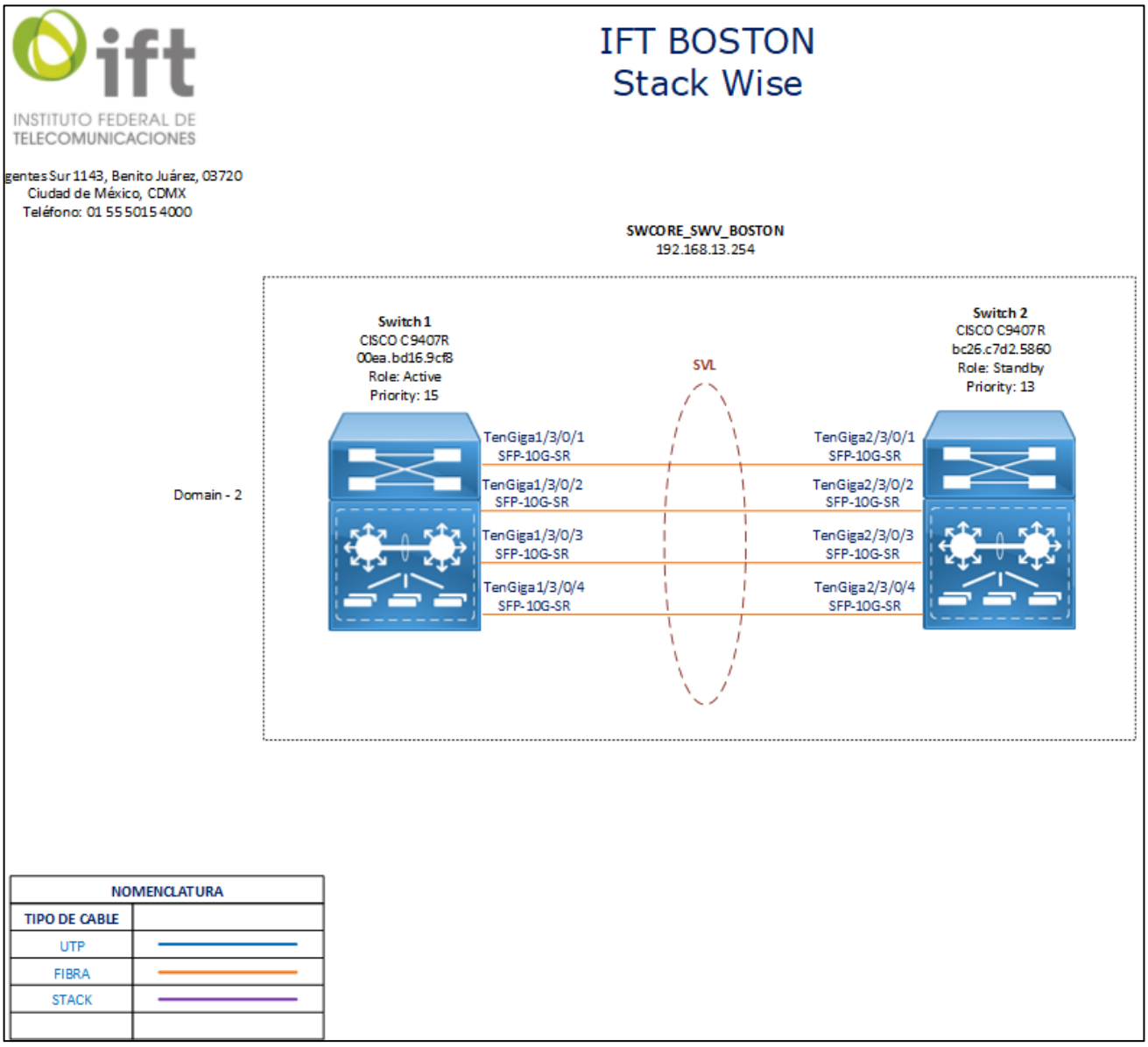
```
SWA_P9_BOSTON#show license right-to-use
Slot#       License Name          Type   Period left
-----------------------------------------------------
    1  network-advantage     Permanent      Lifetime
    1      dna-advantage  Subscription  CSSM Managed
-----------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription


Slot#       License Name          Type   Period left
-----------------------------------------------------
    2  network-advantage     Permanent      Lifetime
    2      dna-advantage  Subscription  CSSM Managed
-----------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription
```

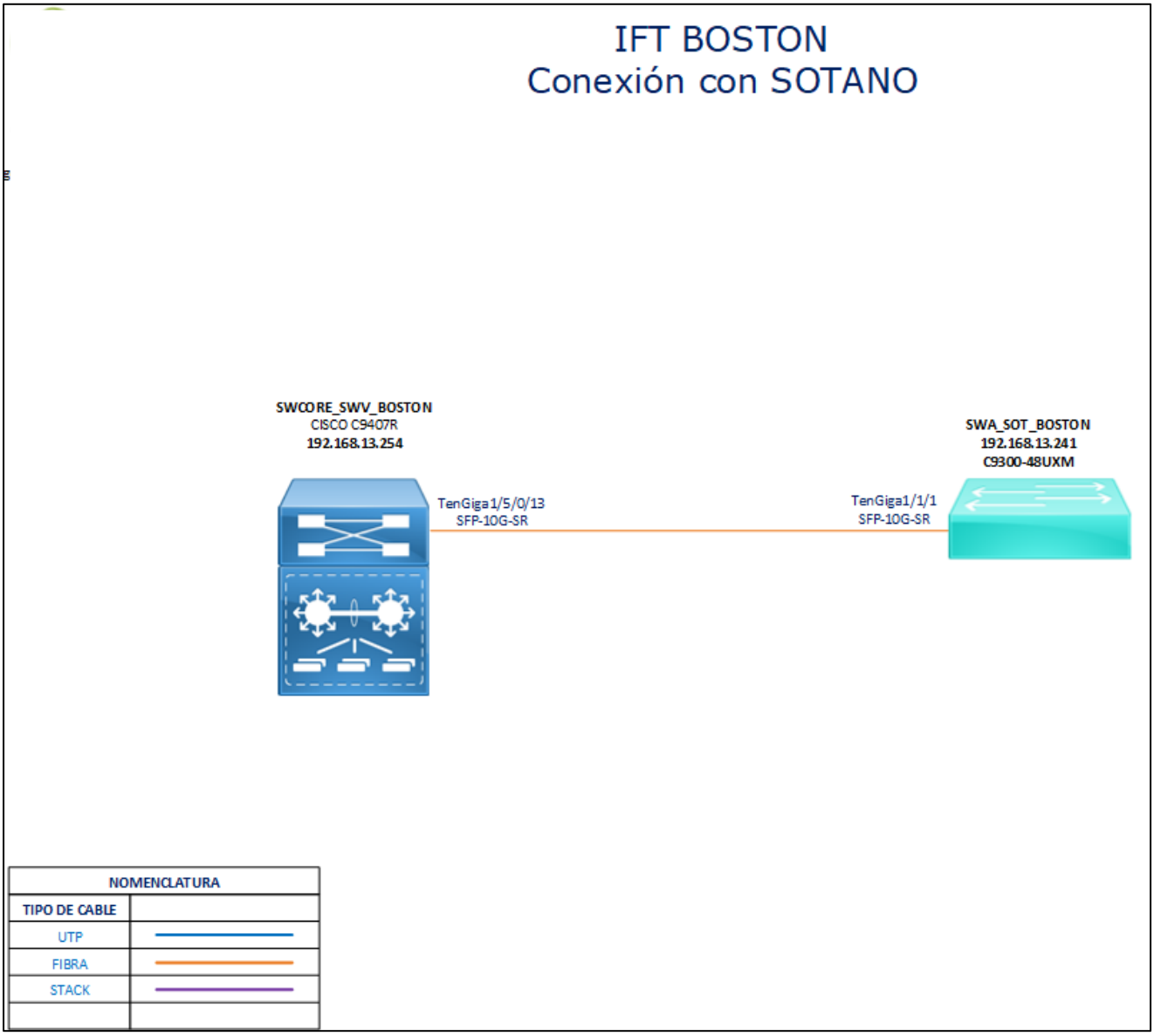
```
SWA_P10_BOSTON#show license right-to-use
Slot#       License Name          Type   Period left
-----------------------------------------------------
    1  network-advantage     Permanent      Lifetime
    1      dna-advantage  Subscription  CSSM Managed
-----------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription


Slot#       License Name          Type   Period left
-----------------------------------------------------
    2  network-advantage     Permanent      Lifetime
    2      dna-advantage  Subscription  CSSM Managed
-----------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription
```

```
SWA_P11_BOSTON#show license right-to-use
Slot#       License Name          Type   Period left
-----------------------------------------------------
    1  network-advantage     Permanent      Lifetime
    1      dna-advantage  Subscription  CSSM Managed
-----------------------------------------------------
License Level on Reboot: network-advantage+dna-advantage Subscription
```

```
SWCORE_SWV_BOSTON#show license summary
Smart Licensing is ENABLED

Registration:
  Status: UNREGISTERED
  Export-Controlled Functionality: Not Allowed

License Authorization:
  Status: EVAL MODE
  Evaluation Period Remaining: 33 days, 13 hours, 26 minutes, 54 seconds

License Usage:
  License                 Entitlement tag               Count Status
  -----------------------------------------------------------------------------
                          (dna_advantage-C9400)             2 EVAL MODE
                          (advantagek9-C9400)               2 EVAL MODE
```

Diagramas Lógicos

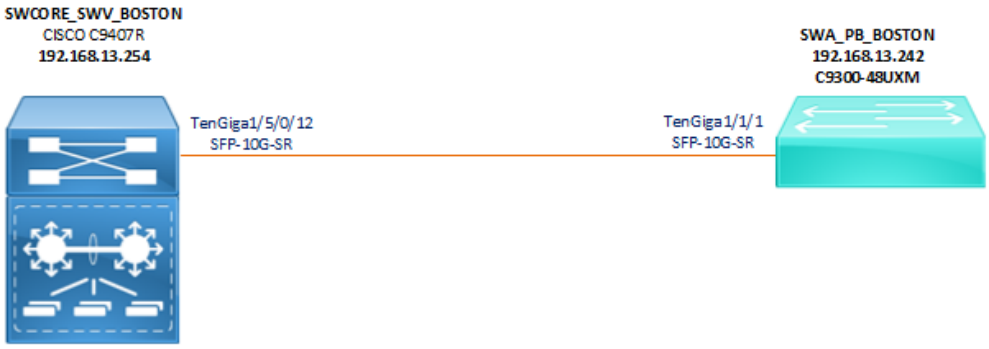



IFT BOSTON
Conexión con SOTANO
SWCORE_SWV_BOSTON
CISCO C9407R
192.168.13.254
TenGiga1/5/0/13
SFP-10G-SR
TenGiga1/1/1
SFP-10G-SR
SWA_SOT_BOSTON
192.168.13.241
C9300-48UXM
NOMENCLATURA
TIPO DE CABLE
UTP
FIBRA
STACK

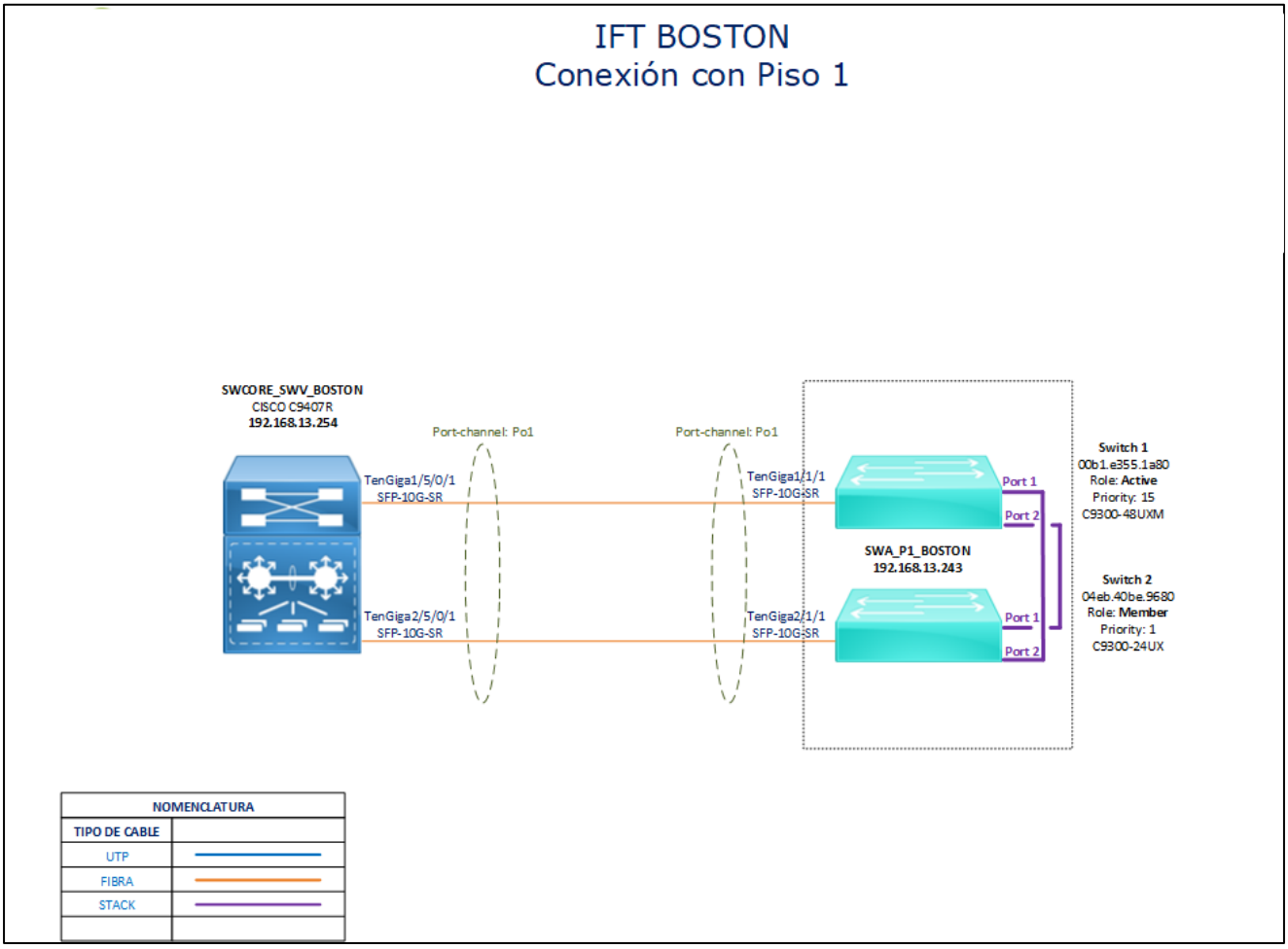
AL DE
IONES

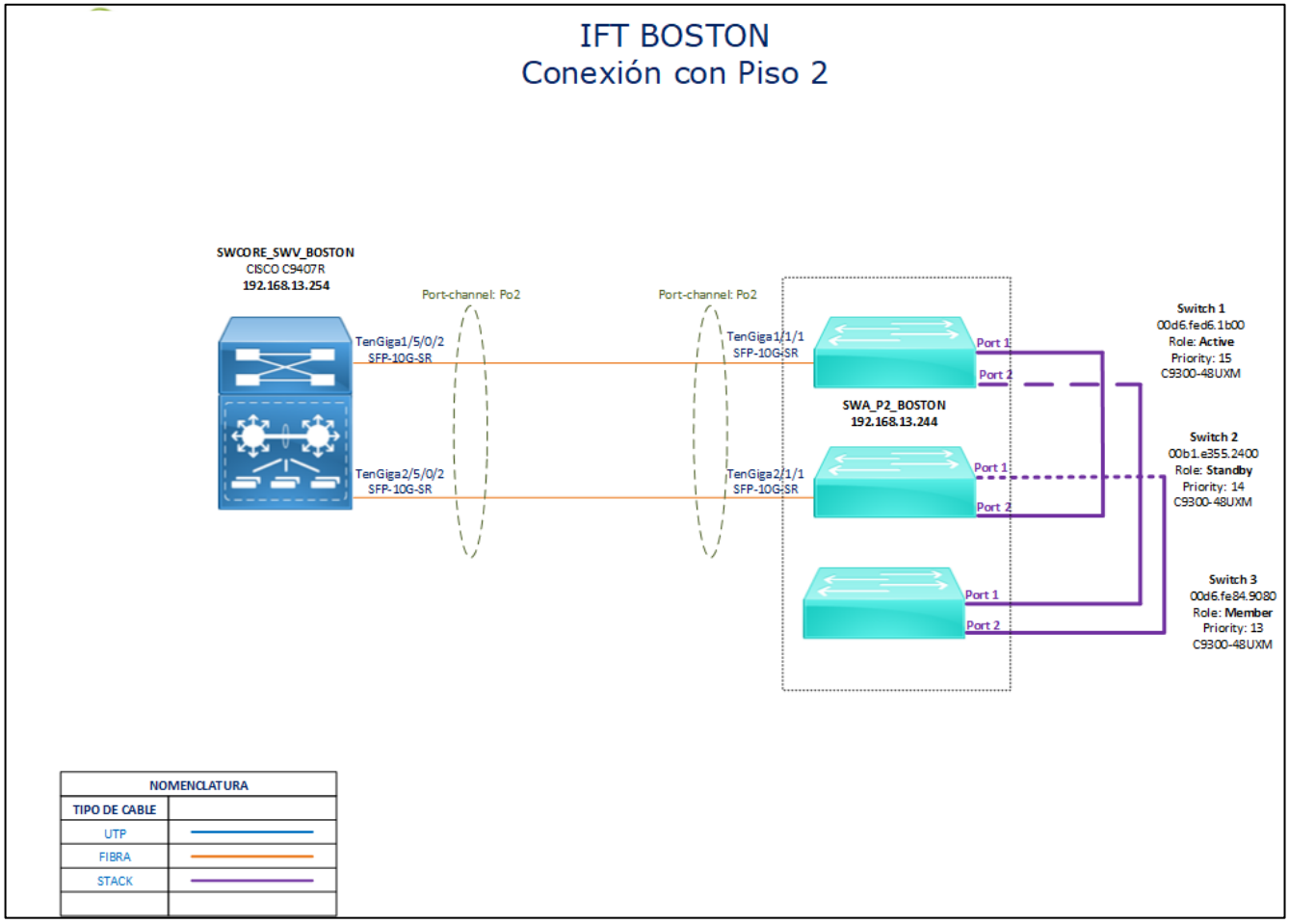
› Juárez, 03720
CDMX
5 4000

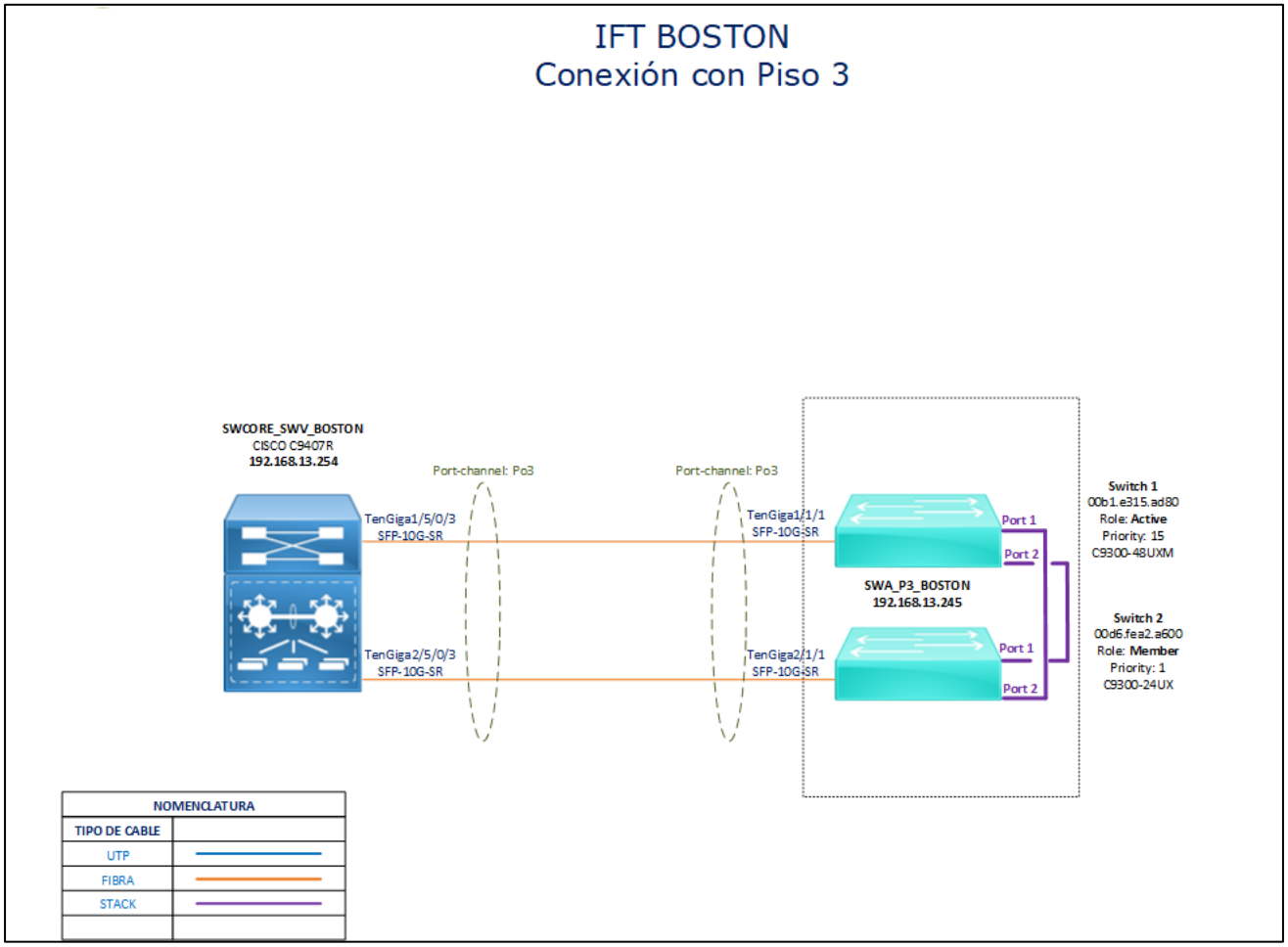
IFT BOSTON
Conexión con PB



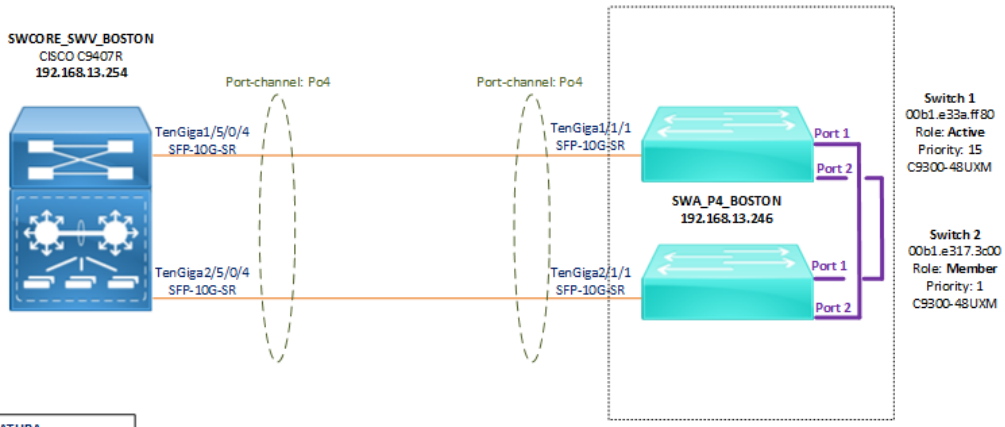
NOMENCLATURA	
TIPO DE CABLE	
UTP	
FIBRA	
STACK	


IFT BOSTON
Conexión con Piso 1
SWCORE_SWV_BOSTON
CISCO C9407R
192.168.13.254
Port-channel: Po1
Port-channel: Po1
TenGiga1/5/0/1
SFP-10G-SR
TenGiga2/5/0/1
SFP-10G-SR
TenGiga1/1/1
SFP-10G-SR
TenGiga2/1/1
SFP-10G-SR
Port 1
Port 2
Port 1
Port 2
SWA_P1_BOSTON
192.168.13.243
Switch 1
00b1.e355.1a80
Role: Active
Priority: 15
C9300-48UXM
Switch 2
04eb.40be.9680
Role: Member
Priority: 1
C9300-24UX
NOMENCLATURA
TIPO DE CABLE
UTP
FIBRA
STACK


IFT BOSTON
Conexión con Piso 2
SWCORE_SWV_BOSTON
CISCO C9407R
192.168.13.254
Port-channel: Po2
Port-channel: Po2
TenGiga1/5/0/2
SFP-10G-SR
TenGiga2/5/0/2
SFP-10G-SR
TenGiga1/1/1
SFP-10G-SR
TenGiga2/1/1
SFP-10G-SR
SWA_P2_BOSTON
192.168.13.244
Port 1
Port 2
Port 1
Port 2
Port 1
Port 2
Switch 1
00d6.fed6.1b00
Role: Active
Priority: 15
C9300-48UXM
Switch 2
00b1.e355.2400
Role: Standby
Priority: 14
C9300-48UXM
Switch 3
00d6.fe84.9080
Role: Member
Priority: 13
C9300-48UXM
NOMENCLATURA
TIPO DE CABLE
UTP
FIBRA
STACK

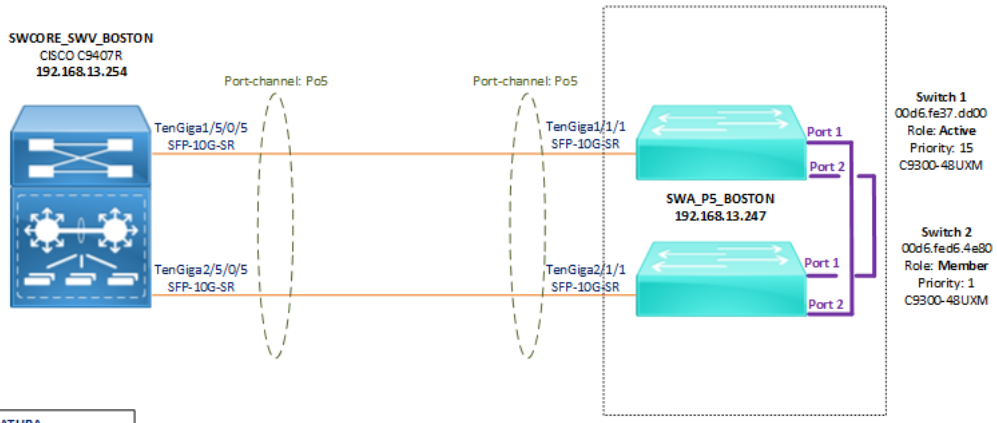

IFT BOSTON
Conexión con Piso 3
SWCORE_SWV_BOSTON
CISCO C9407R
192.168.13.254
Port-channel: Po3
Port-channel: Po3
TenGiga1/5/0/3
SFP-10G-SR
TenGiga2/5/0/3
SFP-10G-SR
TenGiga1/1/1
SFP-10G-SR
TenGiga2/1/1
SFP-10G-SR
Port 1
Port 2
Port 1
Port 2
SWA_P3_BOSTON
192.168.13.245
Switch 1
00b1.e315.ad80
Role: Active
Priority: 15
C9300-48UXM
Switch 2
00d6.fea2.a600
Role: Member
Priority: 1
C9300-24UX
NOMENCLATURA
TIPO DE CABLE
UTP
FIBRA
STACK

IFT BOSTON
Conexión con Piso 4



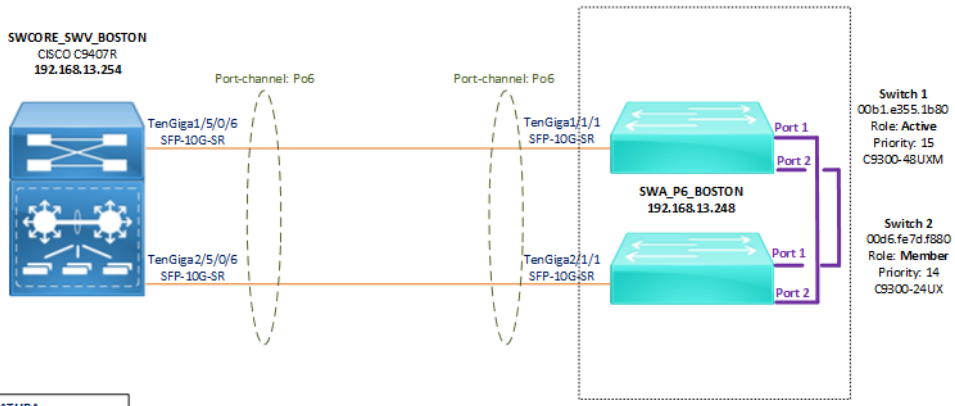
NOMENCLATURA	
TIPO DE CABLE	
UTP	
FIBRA	
STACK	

IFT BOSTON
Conexión con Piso 5

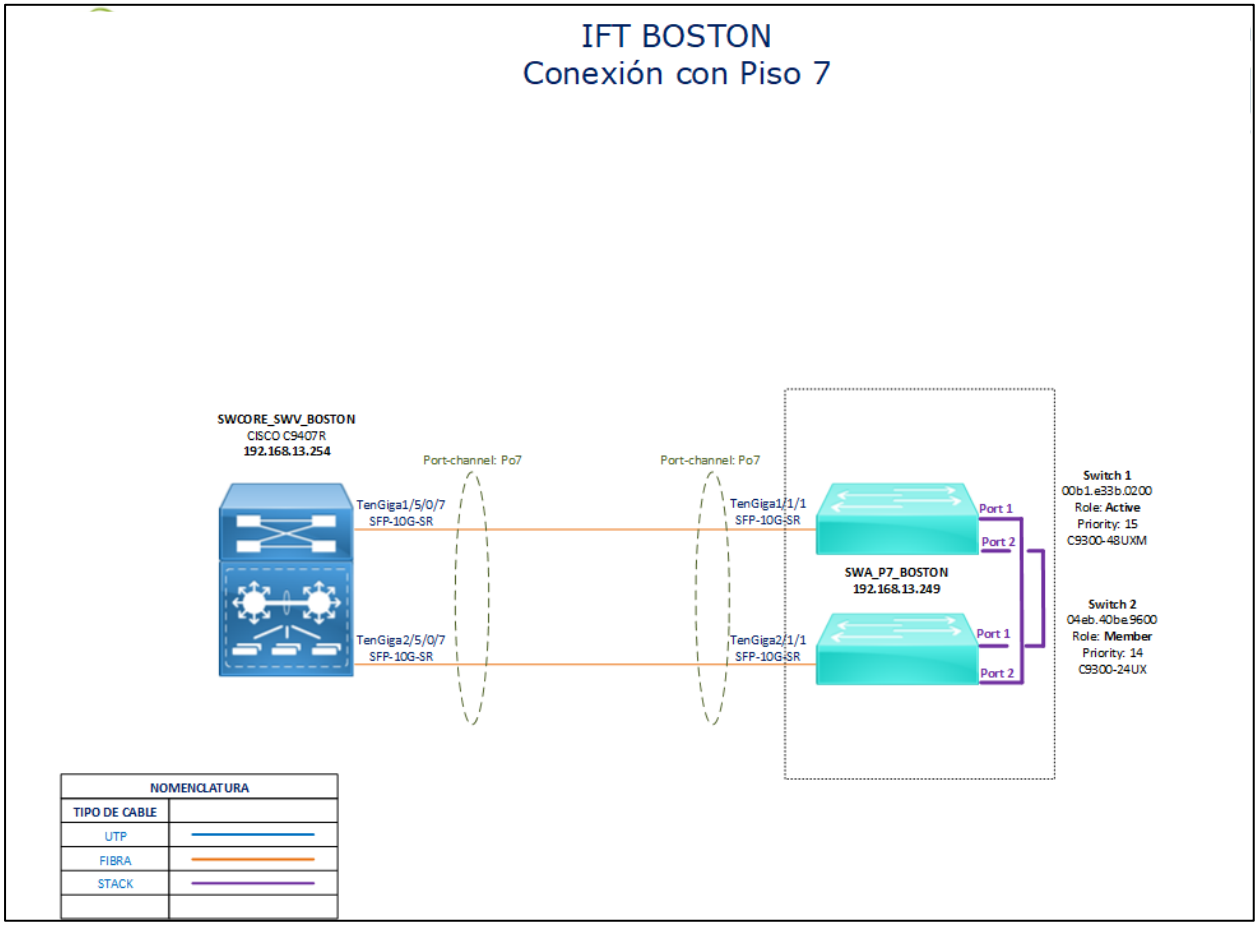


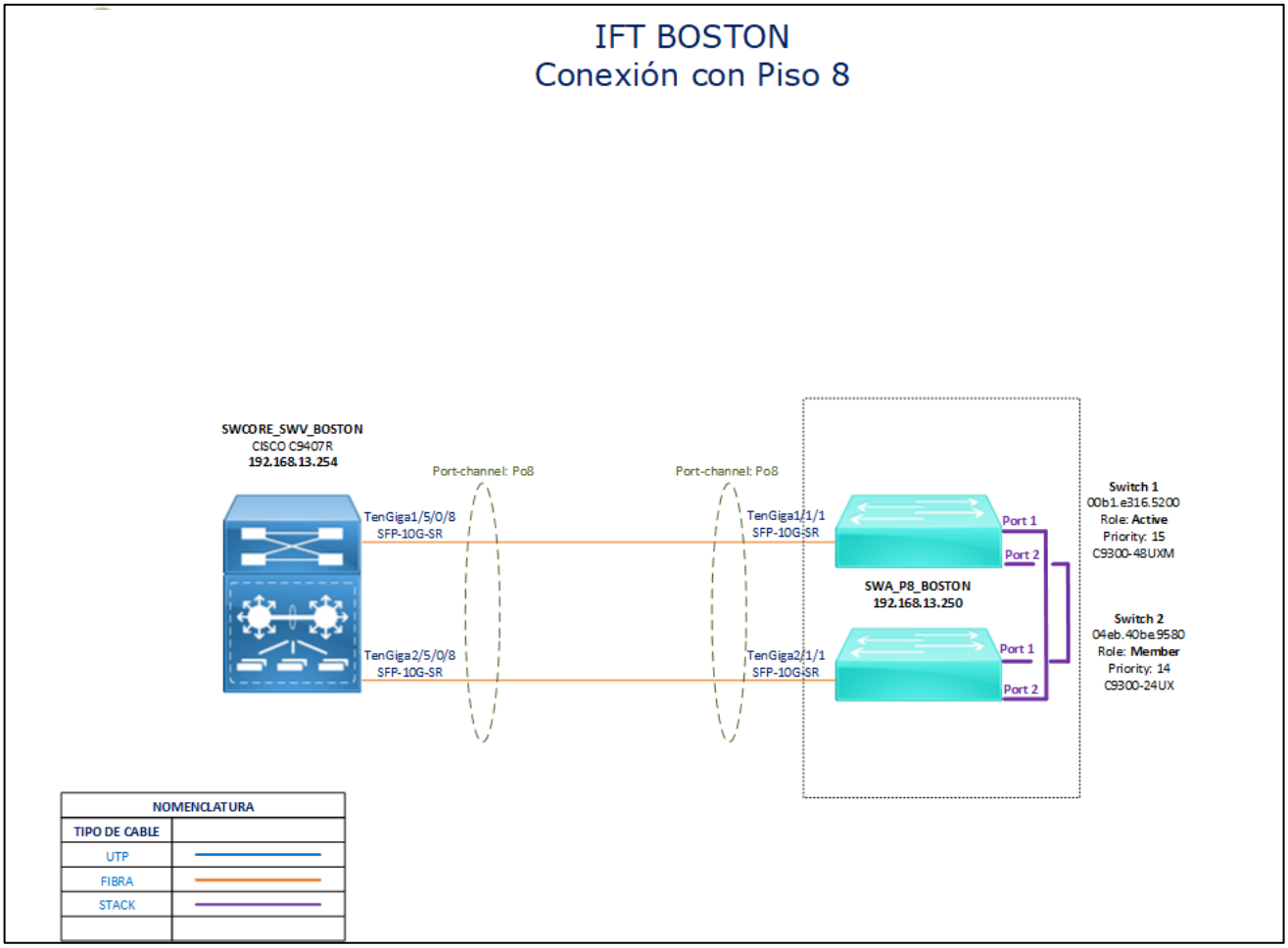
NOMENCLATURA	
TIPO DE CABLE	
UTP	
FIBRA	
STACK	

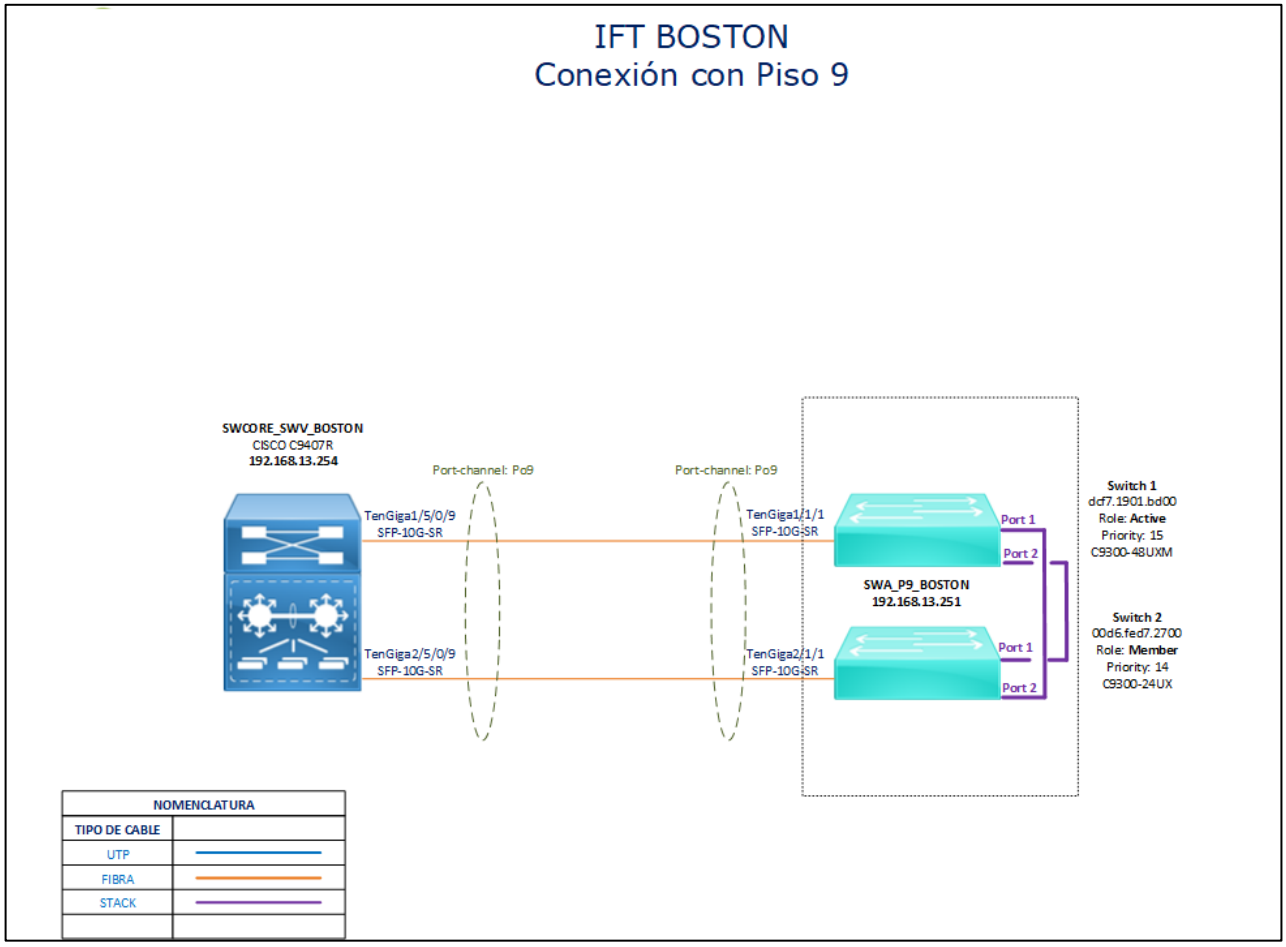
IFT BOSTON
Conexión con Piso 6

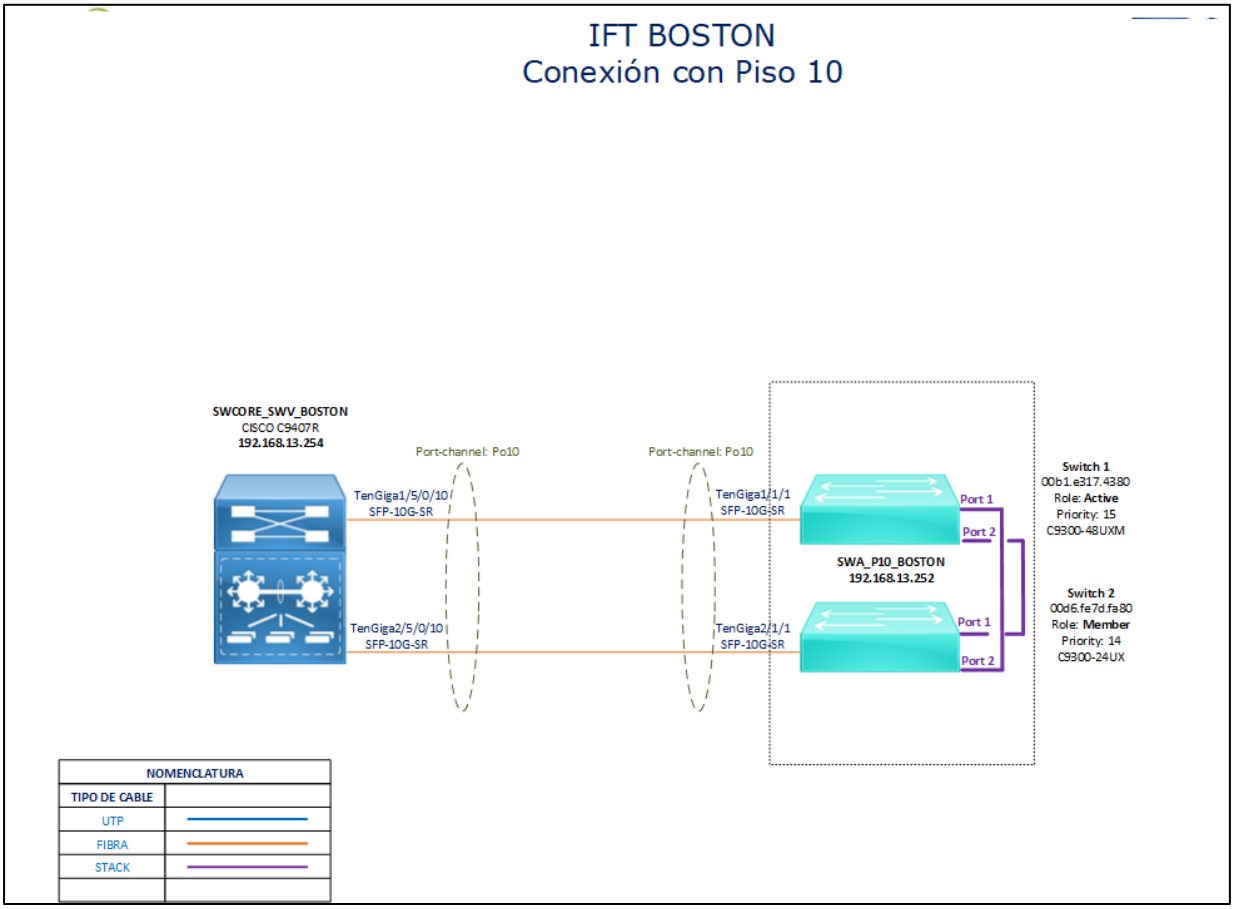


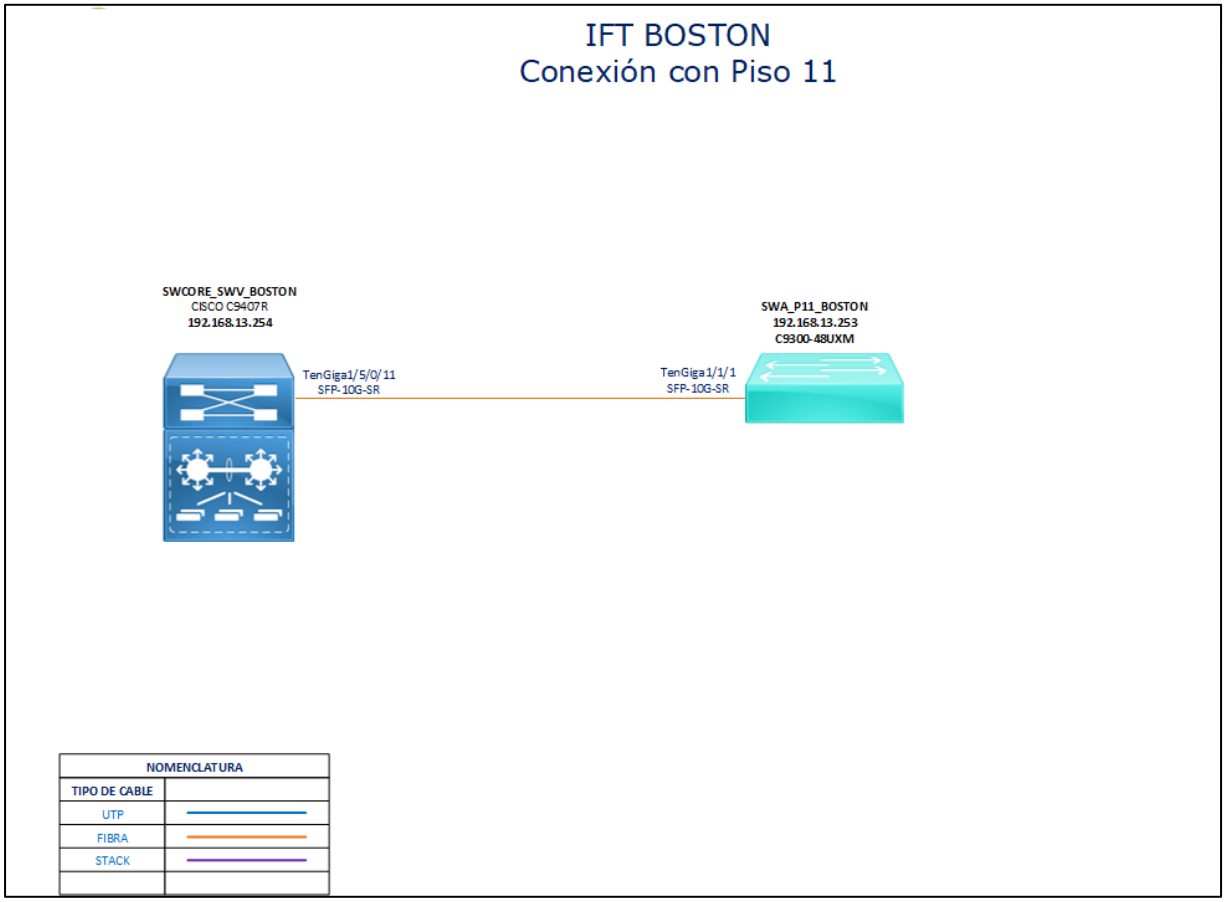
NOMENCLATURA	
TIPO DE CABLE	
UTP	
FIBRA	
STACK	


IFT BOSTON
Conexión con Piso 7
SWCORE_SWV_BOSTON
CISCO C9407R
192.168.13.254
Port-channel: Po7
Port-channel: Po7
TenGiga1/5/0/7
SFP-10G-SR
TenGiga2/5/0/7
SFP-10G-SR
TenGiga1/1/1
SFP-10G-SR
TenGiga2/1/1
SFP-10G-SR
Port 1
Port 2
Port 1
Port 2
SWA_P7_BOSTON
192.168.13.249
Switch 1
00b1.e33b.0200
Role: Active
Priority: 15
C9300-48UXM
Switch 2
04eb.40be.9600
Role: Member
Priority: 14
C9300-24UX
NOMENCLATURA
TIPO DE CABLE
UTP
FIBRA
STACK

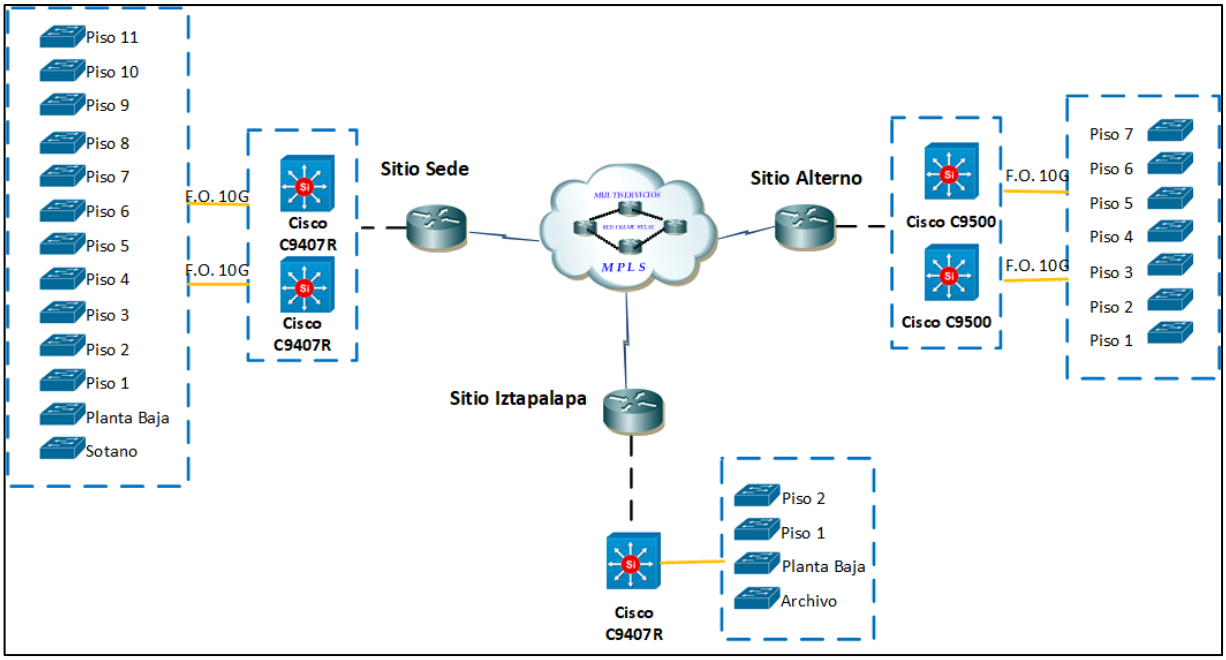

IFT BOSTON
Conexión con Piso 8
SWCORE_SWV_BOSTON
CISCO C9407R
192.168.13.254
Port-channel: Po8
Port-channel: Po8
TenGiga1/5/0/8
SFP-10G-SR
TenGiga2/5/0/8
SFP-10G-SR
TenGiga1/1/1
SFP-10G-SR
TenGiga2/1/1
SFP-10G-SR
Port 1
Port 2
Port 1
Port 2
SWA_P8_BOSTON
192.168.13.250
Switch 1
00b1.e316.5200
Role: Active
Priority: 15
C9300-48UXM
Switch 2
04eb.40be.9580
Role: Member
Priority: 14
C9300-24UX
NOMENCLATURA
TIPO DE CABLE
UTP
FIBRA
STACK

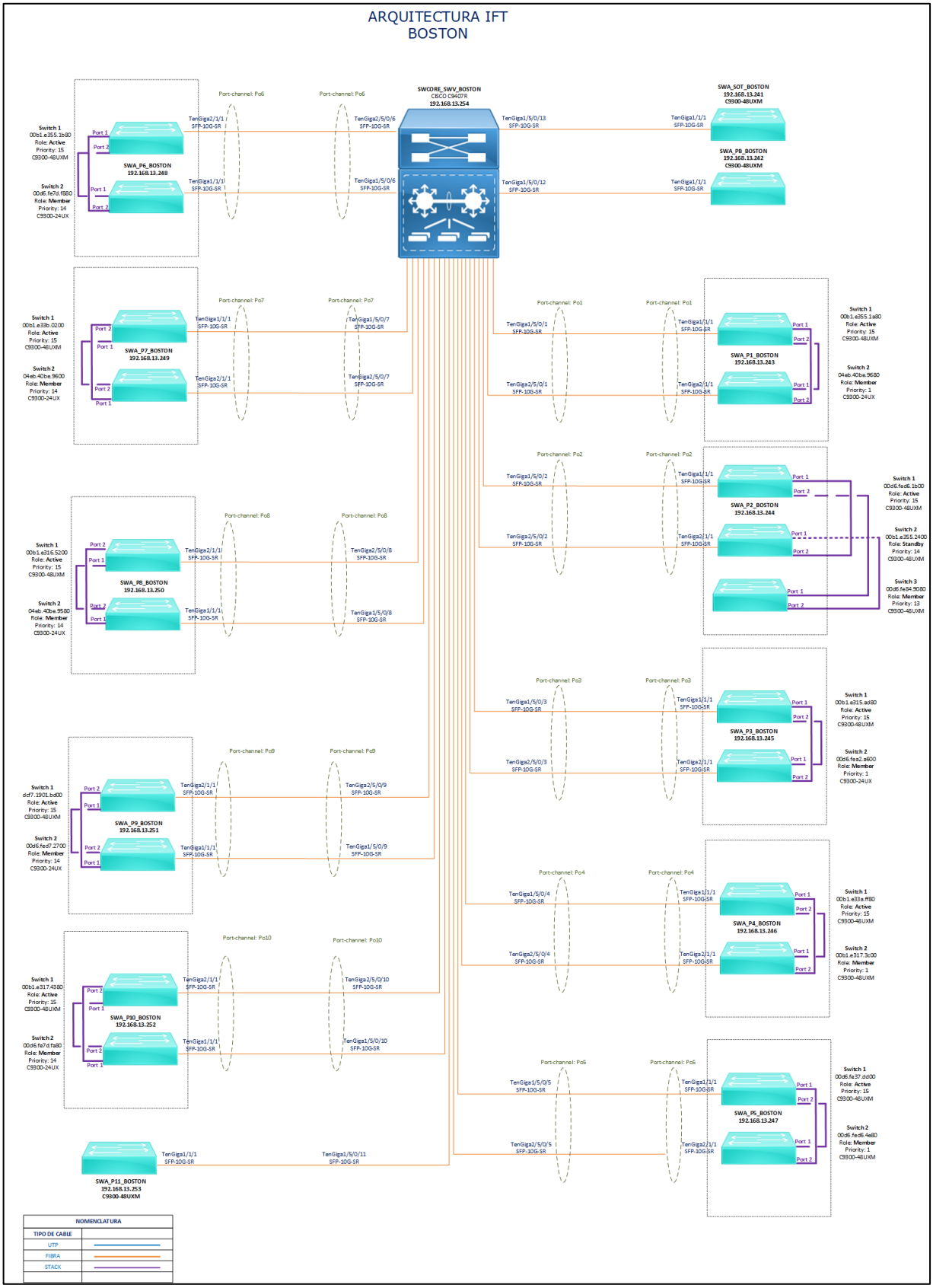

IFT BOSTON
Conexión con Piso 9
SWCORE_SWV_BOSTON
CISCO C9407R
192.168.13.254
Port-channel: Po9
Port-channel: Po9
TenGiga1/5/0/9
SFP-10G-SR
TenGiga2/5/0/9
SFP-10G-SR
TenGiga1/1/1
SFP-10G-SR
TenGiga2/1/1
SFP-10G-SR
Port 1
Port 2
Port 1
Port 2
SWA_P9_BOSTON
192.168.13.251
Switch 1
dcf7.1901.bd00
Role: Active
Priority: 15
C9300-48UXM
Switch 2
00d6.fed7.2700
Role: Member
Priority: 14
C9300-24UX
NOMENCLATURA
TIPO DE CABLE
UTP
FIBRA
STACK


IFT BOSTON
Conexión con Piso 10
SWCORE_SWV_BOSTON
CISCO C9407R
192.168.13.254
Port-channel: Po10
Port-channel: Po10
TenGiga1/5/0/10
SFP-10G-SR
TenGiga2/5/0/10
SFP-10G-SR
TenGiga1/1/1
SFP-10G-SR
TenGiga2/1/1
SFP-10G-SR
Port 1
Port 2
Port 1
Port 2
SWA_P10_BOSTON
192.168.13.252
Switch 1
00b1.e317.4380
Role: Active
Priority: 15
C9300-48UXM
Switch 2
00d6.fe7d.fa80
Role: Member
Priority: 14
C9300-24UX
NOMENCLATURA
TIPO DE CABLE
UTP
FIBRA
STACK


IFT BOSTON
Conexión con Piso 11
SWCORE_SWV_BOSTON
CISCO C9407R
192.168.13.254
TenGiga1/5/0/11
SFP-10G-SR
TenGiga1/1/1
SFP-10G-SR
SWA_P11_BOSTON
192.168.13.253
C9300-48UXM
NOMENCLATURA
TIPO DE CABLE
UTP
FIBRA
STACK

Arquitectura de Solución




ARQUITECTURA IFT
BOSTON
SWCORE_SWV_BOSTON
CISCO C9407R
192.168.13.254
SWA_SOT_BOSTON
192.168.13.241
C9300-48UXM
SWA_PB_BOSTON
192.168.13.242
C9300-48UXM
SWA_P6_BOSTON
192.168.13.248
SWA_P7_BOSTON
192.168.13.249
SWA_P8_BOSTON
192.168.13.250
SWA_P9_BOSTON
192.168.13.251
SWA_P10_BOSTON
192.168.13.252
SWA_P11_BOSTON
192.168.13.253
C9300-48UXM
SWA_P1_BOSTON
192.168.13.243
SWA_P2_BOSTON
192.168.13.244
SWA_P3_BOSTON
192.168.13.245
SWA_P4_BOSTON
192.168.13.246
SWA_P5_BOSTON
192.168.13.247
NOMENCLATURA
TIPO DE CABLE
UTP
FIBRA
STACK