

S/N	Particulars	Qty	Ports	Uplink
1	Layer3 Switches poE+ with RPS	2	48	10 G x 8
2	Layer2 Switches poE+ with RPS	12	48	No Required
3	Layer2 Switches poE+ with RPS	4	48	<b>10 G x 4</b>
8	Layer2 Switches poE+ with RPS	1	24	1 G x 4
10	Wireless Access Points	27		
	SBICAP shall reserve the rights to increase/decrease no. of switches at time of Purhcase order			

No.	Minimum Specifications	Compliance (Yes/No)	Remarks / Deviation
<b>General Features</b>			
1	The OEM suggested should be a part of the Leaders quadrant of 2022 Gartner (Report) Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure		Pls mention proposed Make
2	Switch should be 1U and rack mountable in standard 19" rack.		
3	Switch should support 48 x 10/100/1000 Mbps Base TX POE+ access ports from day one		
4	Switch should support 4 x 1/10 Gig from day One. All uplink port should support LR and SR transceiver from day one(Optional based on Solution)		
5	Switch should have a console port for local administration		
6	Switch should support internal field replaceable unit redundant power supply from day 1.		
7	Switch should have minimum 4 GB RAM and 4 GB Flash.		
8	Switch should have dedicated slot for modular stacking, in addition to asked uplink ports. Should support for minimum 160 Gbps of stacking throughput with 8 switches in single stack.		
<b>Performance:</b>			
8	Switch shall have minimum 176 Gbps of switching fabric and 40 Mpps of forwarding rate.		
9	Switch shall have minimum 32K MAC Addresses and 250 active VLAN.		
10	Should support minimum 4K IPv4 routes or more and 2K IPv6 Routes		
11	Switch shall have 1K or more multicast routes.		
12	Switch should support at least 16K flow entries		
13	Switch should support 128 or more STP Instances.		
14	Switch should have 6MB or more packet buffer.		
15	switch should support 1k QoS Scale Entries		
16	Switch Should Support 9198 Bytes to avoid any Application performance issue		
17	Switch should support Voice VLAN to simplify IP telephony installations by keeping voice traffic on a separate VLAN		
<b>Layer2 Features</b>			
18	Spanning Tree Protocol (802.1d, 802.1w, 802.1s)		
19	Should support 802.1q for carrying multiple VLAN's over a link		
20	Ability to allow you to manage the available MAC address table space by controlling which interface or VLANs learn MAC addresses		
21	Eases troubleshooting by identifying the physical path that a packet takes from source to destination		
22	9198 Bytes to avoid any Application performance issue		
23	The switch should support discovery of the neighboring device of the same vendor giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems.		
24	Should support 4094 VLAN and 256 Active VLANs		
<b>Availability/Protocol</b>			
25	Switch should allow redundancy in uplinks. Uplink bundling/aggregation should be supported using LACP.		
26	Per-port broadcast, multicast, and unicast storm control prevents faulty end stations from degrading overall system performance.		
27	switch should support Change of Authority (COA)		
28	Support for Authentication databases (TACACS, RADIUS).		
29	DHCP snooping is a layer 2 security technology built into the operating system of a capable network switch that drops DHCP traffic determined to be unacceptable. The fundamental use case for DHCP snooping is to prevent unauthorized (rogue) DHCP servers offering IP addresses to DHCP clients		
30	IP Source Guard is a security feature that restricts IP traffic on untrusted Layer 2 ports by filtering traffic based on the DHCP snooping binding database or manually configured IP source bindings. This feature helps prevent IP spoofing attacks when a host tries to spoof and use the IP address of another host.		
31	To enable unicast and/or multicast blocking on a switch port to suppress the flooding of frames being forwarded out through that port.		
32	Should support management CLI and web UI over SNMP, RJ-45 USB console access		
33	Switch should support Operating Temperature range : -5 to +45 degC		
34	Switch should be compatible for IPv4 and IPv6 traffic		

No.	Minimum Specifications	Compliance (Yes/No)	Remarks / Deviation
<b>General Features</b>			
1	The OEM suggested should be a part of the Leaders quadrant of 2022 Gartner (Report) Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure		Pls mention proposed make
2	Switch should be 1U and rack mountable in standard 19" rack.		
3	Switch should support 48 x 10/100/1000 Mbps Base TX NON-POE+ access ports from day one		
4	Switch should support 8 x 1/10 Gig from day One. All uplink port should support LR and SR transceiver from day one		
5	Switch should have a console port for local administration		
6	Switch should support internal field replaceable unit redundant power supply from day 1.		
7	Switch should have minimum 8 GB RAM and 16 GB Flash.		
8	Switch should have dedicated slot for modular stacking, in addition to asked uplink ports. Should support for minimum 480 Gbps of stacking throughput with 8 switches in single stack.		
<b>Performance:</b>			
8	Switch shall have minimum 256 Gbps of switching fabric and 40 Mpps of forwarding rate.		
9	Switch shall have minimum 32K MAC Addresses and 250 active VLAN.		
10	Should support minimum 24K IPv4 routes or more and 16K IPv6 Routes		
11	Switch shall have 8K or more multicast routes.		
12	Switch should support at least 16K flow entries		
13	Switch should support 128 or more STP Instances.		
14	Switch should have 16MB or more packet buffer.		
15	Switch should support 5k QoS Scale Entries		
16	Switch Should Support 9198 Bytes to avoid any Application performance issue		
17	Switch should support Voice VLAN to simplify IP telephony installations by keeping voice traffic on a separate VLAN		
<b>Layer2 Features</b>			
18	Spanning Tree Protocol (802.1d, 802.1w, 802.1s)		
19	Should support 802.1q for carrying multiple VLAN's over a link		
20	Ability to allow you to manage the available MAC address table space by controlling which interface or VLANs learn MAC addresses		
21	Eases troubleshooting by identifying the physical path that a packet takes from source to destination		
22	9198 Bytes to avoid any Application performance issue		
23	The switch should support discovery of the neighboring device of the same vendor giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems.		
24	Should support 4094 VLAN and 256 Active VLANs		
<b>Layer3 Features</b>			
25	Switch should support static and dynamic routing		
26	Switch should re-converge all dynamic routing protocol at the time of routing update changes i.e. Graceful restart for fast re-convergence of routing protocols (OSPF, IS-IS, BGP)		
<b>Availability/Protocol</b>			
27	Switch should allow redundancy in uplinks. Uplink bundling/aggregation should be supported using LACP.		
28	Per-port broadcast, multicast, and unicast storm control prevents faulty end stations from degrading overall system performance.		
29	Support for Authentication databases (TACACS, RADIUS).		
30	DHCP snooping is a layer 2 security technology built into the operating system of a capable network switch that drops DHCP traffic determined to be unacceptable. The fundamental use case for DHCP snooping is to prevent unauthorized (rogue) DHCP servers offering IP addresses to DHCP clients		
31	IP Source Guard is a security feature that restricts IP traffic on untrusted Layer 2 ports by filtering traffic based on the DHCP snooping binding database or manually configured IP source bindings. This feature helps prevent IP spoofing attacks when a host tries to spoof and use the IP address of another host.		
32	To enable unicast and/or multicast blocking on a switch port to suppress the flooding of frames being forwarded out through that port.		
33	Should support management CLI and web UI over SNMP, RJ-45 USB console access		
34	Switch should support Operating Temperature range : -5 to +45 degC		
35	Switch should be compatible for IPv4 and IPv6 traffic		

No.	Minimum Specifications	Compliance (Yes/No)	Remarks
			/ Deviation
General Features			
1	AP type: Indoor, dual radio, 5GHz 802.11ax 4x4 MIMO and 2.4GHz 802.11ax 2x2 MIMO		Pls mention proposed make
2	Aggregated Throughput should be upto 2.6Gbps WPA3 Support IoT-ready Bluetooth 5 and Zigbee support		
3	AP can be manage by On-Prim Controller, Cloud or Standalone mode.		
4	Antenna Type: Four integrated dual-band downtilt omni-directional antennas for 4x4 MIMO with peak antenna gain of 4.2dBi in 2.4GHz and 7.5dBi in 5GHz. Built-in antennas are optimized for horizontal ceiling mounted orientation of the AP. The downtilt angle for maximum gain is roughly 30 degrees.		
5	Interface 1: SmartRate port (RJ-45, maximum negotiated speed 2.5Gbps) - Auto-sensing link speed (100/1000/2500BASE-T) and MDI/MDX		
6	Interface 2: 10/100/1000BASE-T Ethernet network interface (RJ-45) - Auto-sensing link speed and MDI/MDX		
7	Certifications <ul style="list-style-type: none"><li>• UL2043 plenum rating</li><li>• Wi-Fi Alliance:<ul style="list-style-type: none"><li>- Wi-Fi CERTIFIED a, b, g, n, ac, ax</li></ul></li><li>- WPA, WPA2 and WPA3 – Enterprise with CNSA option, Personal(SAE), Enhanced Open ( OWE)</li><li>- WMM, WMM-PS, W-Fi Agile Multiband</li><li>- Passpoint (release 2)</li><li>- Wi-Fi Location</li><li>• Bluetooth SIG</li></ul>		
8	Environmental specifications <ul style="list-style-type: none"><li>• Operating conditions<ul style="list-style-type: none"><li>- Temperature: 0C to +50C/+32F to +122F</li><li>- Humidity: 5% to 93% non-condensing</li></ul></li><li>- AP is plenum rated for use in air-handling spaces</li><li>- ETS 300 019 class 3.2 environments</li><li>• Storage and transportation conditions<ul style="list-style-type: none"><li>- Temperature: -40C to +70C/-40F to +158F</li><li>- Humidity: 5% to 93% non-condensing</li></ul></li><li>- ETS 300 019 classes 1.2 and 2.3 environments</li></ul>		
9	Pls factor additional Licenses for Controller (Enterprise Licenses which shall include LIC-AP, LIC-PEF, LIC-RFP-LIC-AW)		

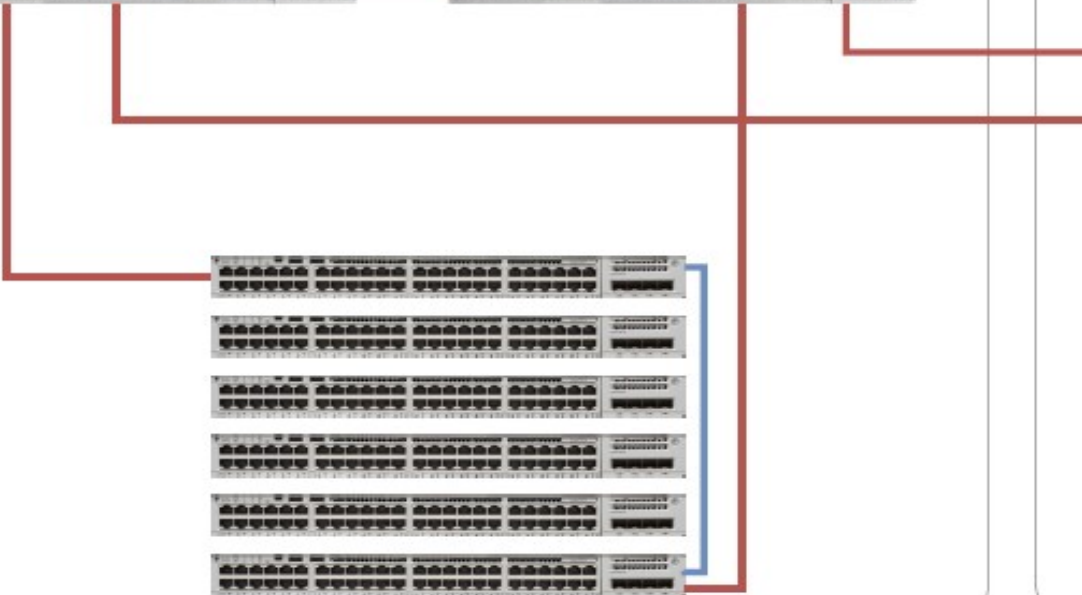
Sr. No.	Item Description	Make	Unit	Qty	Compliance (Yes/No)
<b>(A1) Supply For Data (Cat6) :</b>					
1	GigaSPEED® XL 3071 ETL Verified Category 6 U/UTP Cable, low smoke zero halogen, white jacket, 4 pair count, 1000 ft (305 m) length, WE TOTE® box	Systimax/Panduit /Molex	Nos	155	Pls mention Make
2	CommScope M2000 U/UTP Modular Panel 1U, 24 port (Data & R.Data) -Angular Panel	Systimax/Panduit /Molex	Nos	40	
4	GigaSPEED XL® MGS400 Series Category 6 U/UTP Information Outlet, blue-Rack End	Systimax/Panduit /Molex	Nos	480	
5	GigaSPEED XL® MGS400 Series Category 6 U/UTP Information Outlet, Yellow-Rack End	Systimax/Panduit /Molex	Nos	480	
7	GigaSPEED XL® Cat 6 Patch Cord, LSZH, 2-Mtrs Blue Rack End	Systimax/Panduit /Molex	Nos	480	
7	GigaSPEED XL® Cat 6 Patch Cord, LSZH, 2-Mtrs Blue User End(Outlet to IP Phone)	Systimax/Panduit /Molex	Nos	480	
7	GigaSPEED XL® Cat 6 Patch Cord, LSZH, 1-Mtrs Blue User End(IP Phone To Laptop)	Systimax/Panduit /Molex	Nos	300	
8	GigaSPEED XL® Cat 6 Patch Cord, LSZH, 2-Mtrs Yellow Rack End	Systimax/Panduit /Molex	Nos	100	
4	GigaSPEED XL® MGS400 Series Category 6 U/UTP Information Outlet, blue-User End	Systimax/Panduit /Molex	Nos	480	
5	GigaSPEED XL® MGS400 Series Category 6 U/UTP Information Outlet, Yellow-User End	Systimax/Panduit /Molex	Nos	480	
12	Faceplate Kit, universal, one port, British Standard style, shuttered, white	Systimax/Panduit /Molex	Nos	60	
13	Faceplate Kit, universal, two ports, British Standard style, shuttered, white	Systimax/Panduit /Molex	Nos	500	
14	Faceplate Kit, universal, Four ports, British Standard style, shuttered, white	Systimax/Panduit /Molex	Nos	20	
<b>(A2) Supply For Rack to Rack Interconnectivity :</b>					
1	GigaSPEED X10D® 3091B ETL Verified Category 6A U/UTP Cable, white jacket, 4 pair count, 1000 ft (305 m) length, WE TOTE® box	Systimax/Panduit /Molex	Nos	5	
2	CommScope M2000 U/UTP Modular Panel 1U, 24 port (Data & R.Data) -Angular Panel	Systimax/Panduit /Molex	Nos	8	
6	GigaSPEED X10D® MGS600 Series Information Outlet ,Red-NR to SR connectivity	Systimax/Panduit /Molex	Nos	192	
9	GigaSPEED X10D® 360GS10E Solid Low Smoke Zero Halogen Cordage Modular Patch Cord, Red - LSZH - Rack Side NR to SR -2 Mtrs	Systimax/Panduit /Molex	Nos	192	
<b>(A3) Supply For CCTV &amp; Wi-Fi Cabling :</b>					
1	GigaSPEED X10D® 3091B ETL Verified Category 6A U/UTP Cable, white jacket, 4 pair count, 1000 ft (305 m) length, WE TOTE® box	Systimax/Panduit /Molex	Nos	20	
2	CommScope M2000 U/UTP Modular Panel 1U, 24 port (Data & R.Data) -Angular Panel	Systimax/Panduit /Molex	Nos	6	
4	GigaSPEED X10D® MGS600 Series Information Outlet ,Blue-Data	Systimax/Panduit /Molex	Nos	72	
5	GigaSPEED X10D® MGS600 Series Information Outlet ,Yellow-R.Data	Systimax/Panduit /Molex	Nos	72	
7	GigaSPEED X10D® 360GS10E Solid Low Smoke Zero Halogen Cordage Modular Patch Cord,Blue-Data- Rack Side -2 Mtrs	Systimax/Panduit /Molex	Nos	60	
8	GigaSPEED X10D® 360GS10E Solid Low Smoke Zero Halogen Cordage Modular Patch Cord, Yellow- R.Data 2 Mtrs	Systimax/Panduit /Molex	Nos	60	
10	GigaSPEED X10D® MGS600 Series Information Outlet ,Blue-Data(User Side) Wi-Fi & CCTV	Systimax/Panduit /Molex	Nos	60	
11	GigaSPEED X10D® MGS600 Series Information Outlet ,Yellow-R.Data(User Side) Wi-Fi & CCTV	Systimax/Panduit /Molex	Nos	60	
13	Faceplate Kit, universal, two ports, British Standard style, shuttered, white	Systimax/Panduit /Molex	Nos	60	

(A4) Supply For Rack & Accessories :				
1	DOUBLE BAY RACK AL S34 45U/19W BLACK	APW/NETRAC K	Nos	2
	GROUTING BOLT M10x100 SET OF 4		Nos	2
	HIGH DENSITY MGR, 45U HEIGHT, 8" Width /18" D		Nos	2
	HIGH DENSITY MGR, 45U HEIGHT, 12"Width /18"D		Nos	1
	CABLE RUNWAY 1 MTR		Nos	2
	RUNWAY MOUNTING KIT		Nos	2
	LADDER CLOSING BKT		Nos	2
	WALL BKT SET OF 2		Nos	2
	RUNWAY JOINING BKT RIGHT ANGLE		Nos	8
	CABLE RUNWAY 2 MTR		Nos	1
	PDU VERTICAL IEC13 WITH 12 SOCKET WITH 32AMP MCB AND INDICATOR WITH 3MTR CABLE		Nos	4
	CANTILEVER SHELF,19 INCH,1U/255mmD		Nos	2
	HRDWRE,FRNT PNL,SQR,PKT OF 20		Nos	8
2	CYBER RACK 42U 600/1000D	APW/NETRAC K	Nos	2
	DOOR STEEL 600W 42U FULL PERFORATED		Nos	2
	DOOR STEEL 600W 42U SPLIT PERFORATED		Nos	2
	CASTOR MED DTY FT BRAKE 100 KG		Nos	2
	EQUIPMENT SHELF 725MMD/600W		Nos	2
	PDU VERTICAL IEC13 WITH 12 SOCKET WITH 32AMP MCB AND INDICATOR WITH 3MTR CABLE		Nos	4
	HRDWRE,FRNT PNL,SQR,PKT OF 20		Nos	2
	FAN HOUSING UNIT		Nos	2
	FAN 230VAC 90 CFM		Nos	4
	CABLE MANAGER,1U,19" PVC LOOPS		Nos	2
16	PVC Back Box ( if required)	Standard	Nos	150
17	2U Cable Manager	Standard	Nos	12
18	Cable dressing accessories	Standard	Lot.	1
(B) : Installation				
1	Cat-6 Cable laying			
2	Cat-6A Cable laying			
3	Termination of information Outlet - Cat6(User End)- Data & R.Data			
4	Termination of information Outlet - Cat6A(Wi-Fi & CCTV End)			
5	Termination of Patch Panel(Cat6A)			
6	Termination of Patch Panel(Cat6)			
7	End to End Testing & Lableing (1171 Ports)			
8	Installation of PVC Box(If Required)			
9	Project Management Charges			
10	Stickering & Documentation Charges			
11	Open Rack installation Charges			
12	Rack Dressing,Cable Routing,Patch Cord Labeling(Wi-Fi Cables)			

Sr No.	Location	Count	User/IP/MTR		TV/VC		Printer	WiFi		CCTV		BioMetric	Bio-redudancy	Face Plate		
			Data	Redundant Data	Data	Redundant Data		WIFI-Active	WIFI Rednt	CCTV Active	CCTV Rednt			1 Port	2 Port	4 Port
1	Reception	2	4	4	2	2	0	0	0	0	0	4	4	0	2	2
2	Training Room	1	2	2	1	1	0	0	0	0	0	0	0	0	1	1
3	4 Seat Meeting Room	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0
4	8 Seat Meeting Room	1	2	2	1	1	0	0	0	0	0	0	0	0	3	0
5	6 Seat Meeting Room	3	3	3	0	0	0	0	0	0	0	0	0	0	3	0
6	Conference/Meeting Room- 11 Seater	2	6	6	2	2	0	0	0	0	0	0	0	0	4	2
7	Board Room	1	4	4	2	2	0	1	1	0	0	0	0	0	4	1
8	Security Desk	2	2	2	0	0	0	0	0	0	0	0	0	0	2	0
9	Doctor Room	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0
10	HR Room	1	5	5	0	0	1	0	0	0	0	0	0	1	5	0
11	HR Cabin	1	1	1	0	0	1	0	0	0	0	0	0	0	1	0
12	VP Cabin	7	7	7	0	0	0	0	0	0	0	0	0	0	7	0
13	SVP Cabin	13	13	13	0	0	0	0	0	0	0	0	0	0	13	0
14	EVP Cabin	4	8	8	0	0	0	0	0	0	0	0	0	0	0	4
15	EVP Cabin Chairs	4	4	4	0	0	0	0	0	0	0	0	0	0	4	0
16	PCOO Cabin	1	2	3	1	1	0	1	1	0	0	0	0	0	3	1
17	PCOO Cabin Chairs	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0
18	MD Cabin	1	2	2	1	1	0	1	1	0	0	0	0	0	2	1
19	MD Cabin Chairs	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0
20	Executive Lounge	1	1	1	1	1	0	0	0	0	0	0	0	0	2	0
21	Executive Waiting Area	1	1	1	1	1	0	0	0	0	0	0	0	0	2	0
22	Pantry	2	2	2	0	0	0	0	0	0	0	0	0	0	2	0
23	Dealing Room	4	4	4	0	0	0	0	0	0	0	0	0	0	4	0
24	Research Room	19	19	19	0	0	0	0	0	0	0	1	1	2	19	0
25	IT Room	3	6	6	0	0	0	0	0	0	0	1	1	0	3	0
26	Server Room	1	1	1	0	0	0	0	0	0	0	1	1	0	1	0
27	UPS Room	1	1	1	0	0	0	0	0	0	0	1	1	0	1	0
28	Store Room	1	1	1	0	0	0	0	0	0	0	1	1	0	1	0
29	Electric1al Room	1	1	1	0	0	0	0	0	0	0	1	1	0	1	0
30	Compactor Room	1	1	1	0	0	0	0	0	0	0	1	1	0	1	0
31	Gym Area	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0
32	Workstation	208	208	208	0	0	0	0	0	0	0	0	0	0	208	0
33	Workstation Small	100	100	100	0	0	0	0	0	0	0	0	0	0	100	0
34	Printer / X-ray Machine	11	11	11	0	0	0	0	0	0	0	0	0	0	11	0
35	Working Pod	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0
36	Telephone Both	2	2	2	0	0	0	0	0	0	0	0	0	0	2	0
37	Buffer	0	10	10	3	3	0	1	1	2	2	1	1	2	7	2
38	PASF&GH Secretary and MD Secretray Desk	2	2	2	0	0	4	0	0	0	0	0	0	0	6	0
Total CAT 6 Nodes		413	445	446	15	15	6	4	4	2	2	12	12	7	429	14
1	WIFI	20	0	0	0	0	0	20	20	0	0	0	0	0	20	0
2	CCTV	36	0	0	0	0	0	0	0	34	34	0	0	0	0	0
Total CAT 6A Nodes		56	0	0	0	0	0	20	20	34	34	0	0	0	20	0
3	Server Rack 1 to Network Rack 1	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Server Rack 1 to Network Rack 2	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Server Rack 2 to Network Rack 1	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Server Rack 2 to Network Rack 2	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0
Total CAT 6A Nodes (Interconnect)		96	96	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		565	541	446	15	15	6	24	24	36	36	12	12	7	449	14

Summary		
	Active	Redundant
Total Data Node	562	461
Total WiFi & CCTV	60	60
Access Control	2	2
BIO Metric	12	12
Total Node	636	535
		1171

Core Switches



Access Switches

Rack -1



10 gig DAC cable



Access Switches

Rack -2