

Section VI of the Bid Document. Technical requirements and specifications

Lot 1: Core Network Optimization and Security Enhancement. This is a Cisco and River bed Solution for standardization purposes.

Item	Technical Specification	Quantity	Supplier Technical Offer and Specifications <i>(provide a detailed specifications and comments on a SEPARATE SHEET)</i>
i. Network Load Balancer and WAN Acceleration	<ul style="list-style-type: none"> - WAN Optimization and acceleration device with WAN Load balancing utilising Path selection technology - Application level policy based control for path selection - Optimized WAN Capacity of 10Mbs or more - 400 Optimized TCP and UDP flows or more, should be for Lusaka and Kariba Admin. - 80 Optimized TCP and UDP flows or more, should be for Kariba Hydro and Harare. - upgradable by adding a software licence. - QoS Bandwidth (a) - 20Mbs - 2GB RAM 	1 x Lusaka -80 Users 1 x Kariba Admin -80 Users 1 x Harare -20 1 x Kariba hydro -20	

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	<ul style="list-style-type: none"> - Should be configured to accommodate 2 WAN links - Should deliver 4 streamlining technologies, data, transport, application and management 		
ii. Datacenter Router/ Voice Gateways	<ul style="list-style-type: none"> - New, converged branch platform with leading network, compute, and WAN services - Multi-core CPU architecture runs router software for better resiliency - Gigabit forwarding performance with software-upgradable feature licenses - 1- and 2-rack-unit (RU) modular form factor - Should terminate 12 analog lines on FXO ports on each Gateway - SIP termination support - DSP Modules 32 channels - Unified Communications Software - Voice Network Modules and Interface cards - SRST Support for 100 users per site - Security Licenses 	<p>1 x Kariba Admin</p> <p>1 x Lusaka</p>	
iii. Branch Router/ Voice Gateways	<ul style="list-style-type: none"> - New, converged branch platform with leading network, compute, and WAN services - Multi-core CPU architecture runs router software for better resiliency - Gigabit forwarding performance with software-upgradable feature licenses - 1- and 2-rack-unit (RU) modular form factor - Should terminate 8 analog lines on FXO ports on each Gateway - DSP Modules 32 channels - Unified Communications Software - Voice Network Modules and Interface cards - SRST Support for 25 users per site 	<p>1 x Harare</p> <p>1 x Kariba Hydro</p>	

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	<ul style="list-style-type: none"> - Security Licenses 		
iv. Datacenter Switch	<ul style="list-style-type: none"> - 24 ports of SFP+ 10G Ethernet fiber connection with Flexible Netflow feature - IP Base IOS image - 715W Dual redundant power module and three modular fans - Layer 3 routing features: OSPF stub, EIGRP stub, RIPv1, v2, PIM stub - Up to 9 members stacking and up to 480Gbps of stack throughput - Up to 20G wireless bandwidth per switch, up to 50 APs and 2000 Wireless clients for each switching entity - 4GB memory (DRAM) and 4GB flash - 12 * 10GBASE-CU SFP+ Cable 3 Meter per switch - 12 * 1000BASE-T SFP transceivers per switch - Should Include Energy Mgmt Perpetual Lic for 50 DO End Points - Should include a Prime Infrastructure Device License - Should include the Identity Services Engine 50 EndPoint Base License - 1 year advance hardware warranty. 	<p>1 x Kariba Admin DR Site</p> <p>1 x Lusaka-Main Site</p>	
v. Web security Gateway	Web Security Appliance that combines controls on web usage, reputation filtering, malware filtering, and data security on a single platform.	1 x Lusaka - 100 Users	

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	<ul style="list-style-type: none"> • Should provide essential protection and control of ZRA’s web traffic using URL filtering, reputation, and application visibility and control technologies (Web Usage Controls + Web Reputation) • Should Deliver protection, performance, and accuracy including capability of intelligent HTTPS decryption, so that all associated security and access policies can be applied to encrypted traffic. This system should efficiently return cached web content through intelligent memory, disk, and kernel management-easily ensuring high performance and throughput for even the largest of networks. • Industry-leading acceptable use enforcement with Web usage controls, available on the Web Security Appliances to provide industry-leading visibility and protection from web use violations through a combination of list-based URL filtering and real-time dynamic categorization. Web usage controls to include both the category of the content and the application in use as part of the policy controls available to administrators. In addition to simply blocking or allowing applications by type or individually, administrators can apply deeper controls to particular application types. • Powerful data security enforcement -Data security and data-loss prevention (DLP) empower organizations to take quick, easy steps to enforce common-sense data security policies; for example, preventing engineers from sending design files by webmail, blocking uploads by finance staff of Microsoft Excel spreadsheets larger than 100 KB, or preventing posts of content to blogs or social networking sites. These simple data security policies can be created for outbound traffic on HTTP, HTTPS, and FTP. By directing all outbound HTTP, HTTPS, and FTP traffic to the third-party DLP appliance, organizations can allow or block based on the third-party rules and policies. This scenario also enables deep content inspection for regulatory compliance and intellectual property protection, incident severity definition, case management, and performance optimization. • Single sign-on capabilities with Active Directory Integration. • Comprehensive management and reporting capabilities -Web Security Manager that provides a single, easy-to-understand view of all access and 	<p>1 x Kariba Admin -150 Users (this will also include configuration of internet access by Harare and Kariba Hydro from the Kariba Admin Offices,)</p>	
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	<p>security policies configured on the appliance. Administrators to manage all web-access policies from a single location. Additionally, administrators can mix and match client-based criteria and destination-based criteria to flexibly determine when each set of policies is applied.</p> <ul style="list-style-type: none"> • Fast, full application proxy • Integrated layer 4 traffic monitor • Dynamic vectoring and streaming engine • Integrated multisupplier verdict engines • Rack-mountable - 1U form factor. Should include the Rack mounting kit • 2 x Intel 2.8 GHz Processor • Minimum 4 GB RAM • Minimum 500GB Hard Drive Capacity • Should support Ethernet, Fast Ethernet, Gigabit Ethernet connection • Appliance should have connection/user capacity of 2000 • 1 Year essentials subscription license and advance hardware warranty 		
vi. Content Security Management Appliance	<ul style="list-style-type: none"> - Should Provide centralized management and reporting across multiple Web Security Appliances (Web Reporting + Web Policy and Configuration Management) - Virtual Appliance should be deployed via OVF images on existing VMWare environment 	250 Users	
vii. Next-generation firewall (NGFW) with Firepower services with Remote	<ul style="list-style-type: none"> - Threat-focused NGFW; provides firewall functionality, advanced threat protection, and advanced breach detection and remediation combined in a single device. Include 1 year subscription licenses to support the following: <ul style="list-style-type: none"> • Market-leading NGIPS • Advanced malware protection • Full Contextual Awareness and Application Visibility Control • URL filtering - NGFW Performance and Specifications 	1 x Kariba Admin 1 x Lusaka	

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<p>access licenses</p>	<ul style="list-style-type: none"> • Maximum application control (AVC) throughput: 1,100 Mbps • Maximum application control (AVC) and NGIPS throughput: 650 Mbps • Maximum concurrent sessions: 500,000 • Maximum New Connections per second: • 20,000 • Application control (AVC) or IPS sizing throughput [440 byte HTTP] 375 Mbps • Supported applications More than 3,000 • URL categories 80+ • Number of URLs categorized: More than 280 million • Centralised configuration, logging, monitoring, and reporting of the NGFW– (Security Manager for rule configuration to be installed on Windows 2012 and support up to 5 Firewalls, Analytics Management Centre to be installed on VMware server and support up to 10 firewalls) • Stateful inspection throughput (maximum): 2 Gbps • Stateful inspection throughput (multiprotocol): 1 Gbps • Triple Data Encryption Standard/Advanced Encryption Standard (3DES/AES) VPN throughput: 300 Mbps • Users/nodes: Unlimited • IPsec site-to-site VPN peers: 750 • High availability: Active/Active and Active/Standby • USB 2.0 ports: 2 • Integrated I/O: 8 GE copper • Dedicated management port: Yes (1 GE) • Serial ports: 1 RJ-45 console • Solid-state drive: 1 slot, 120 GB MLC SED • Memory: 8 GB • Minimum system flash: 8 GB • Should include a 3yr license to support up to 100 SSL VPN Total Active 		
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	<p>Users.</p> <ul style="list-style-type: none"> • 1 year advance hardware warranty. 		
viii. Services	<ul style="list-style-type: none"> - Installation, Configuration, Commissioning, - Travel & Accommodation - Project Management - Documentation 	1	

Lot 2: Unified Communications System: Cisco based Solution.

Item	Technical Specification	Quantity	Supplier Technical Offer and Specifications <i>(provide a detailed specifications of the solution and comments on a SEPARATE SHEET)</i>
Unified Communications System	<ul style="list-style-type: none"> • Centralised IPBX Solution, upgradable to service all the offices in the two countries • Server Based, Redundant servers REQUIRED • Virtualized Environment • Centrally-managed platform via GUI • Should be able to scale to 1000 users • Full-featured, enterprise-class communications and collaboration services • Should support remote site telephony • Support Hunt Lines and Hunt queue announcement messages • Should Support Extension Mobility feature • Call processing for Voice & Video over single platform • Should support IM & Presence integrations - REQUIRED • Least cost routing (LCR)-enabled • Supported Protocols SIP/H323/MGCP or SCCP • Q.SIG support over SIP trunk • Should support IP Phones, Soft clients and a Mobile application to be provided • LDAP integration capability REQUIRED. • Installation, Configuration, Commissioning <ul style="list-style-type: none"> ○ Commissioning, ○ Travel & Accommodation 	1 x Lusaka but Servicing all the offices (in Zambia and Zimbabwe)	
Purpose built UCS Servers	<ul style="list-style-type: none"> • Scaled according to the Solution offered 	2 x Lusaka	Purpose built UCS Servers

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	<ul style="list-style-type: none"> • Installation, Configuration, Commissioning 		
Switchboard	<ul style="list-style-type: none"> • PC based application • Call control allows users to answer, transfer, park, hold, place calls, and more • The built-in corporate directory or with Active Directory • Speed dials create frequently dialed contacts that may or may not already reside in the corporate directory. • With busy lamp field and presence users can easily see a contact's availability from the activity of their phone and their presence state • Hands free set • Installation, Configuration, Commissioning 	3 Consoles (Lusaka, Kariba Admin & Harare)	
Unified Voicemail	<ul style="list-style-type: none"> • Separate message store on Linux appliance • Single inbox in Outlook • Interoperability with an Exchange environment /Equivalent • Message-waiting indicator (MWI) support • access your Exchange calendars and contacts • IMAP support • Virtualization support • Voicemail to email support • Installation, Configuration, Commissioning 	180 Users	
Telephony Management System	<ul style="list-style-type: none"> • Web based real-time statistics and dashboards • Outgoing, incoming and internal call analysis • Integrated with any business application • Multi carrier - site - country - time zone currency • Microsoft SQL Server database supported • Support of automatic scheduling and emailing of utilization reports • Upgradeable to over 1000 users • Fraud notification capabilities • Installation, Configuration, Commissioning 	180 Users	
Standard IP	<ul style="list-style-type: none"> • Two-line IP Phone 	160	

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Phones	<ul style="list-style-type: none"> • Easy-to-read 396 x 81-pixel, white back-lit, monochrome, antiglare LCD for optimal viewing • Integrated 10/100 Ethernet switch for co-location of a PC • Full-duplex speakerphone and dedicated headset port • Fixed keys for Directory, Settings, Transfer, Conference, Hold, and Messages improve productivity • Two tricolor illuminated line keys • Installation, Configuration, Commissioning 		
Executive IP Phones	<ul style="list-style-type: none"> • Built-in, VGA-quality video camera that supports up to 30 frames per second • High-resolution 5-inch color display (VGA) • Multimedia endpoint applications designed with XML to improve business processes and user experiences • Bluetooth hands-free profile • High-definition voice for clarity • Tricolor programmable line and feature keys and session keys for "at-a-glance" status for primary and shared lines • Dedicated fixed keys for commonly used features, including conference, transfer, applications, directories, and messages • Should have an IEEE 10/100/1000 network and PC ports • Installation, Configuration, Commissioning 	25	
Conference Phones	<ul style="list-style-type: none"> • Comprehensive unified communications features • Full-duplex, two-way, wideband (G.722) audio performance for mission-critical collaboration • Communications security to keep business conversations private, using 128K Advanced Encryption Standard (AES) 	<p>1 x Lusaka</p> <p>1 x Kariba</p> <p>1 x Harare</p>	

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	<ul style="list-style-type: none"> • Support for Power over Ethernet (PoE) • Support for Session Initiation Protocol (SIP) and standards-based IP communications, for greater interoperability and flexibility • 4 Programmable Soft Keys • Screen 396 x 162 Mono (3.5-in) • Wireless Microphone Kit required • Installation, Configuration, Commissioning 		
Telepresence Video Conferencing Unit	<p>Codec device complete with Camera, Mics, Speakers Support a room of 20 people Standards-compliant 1080p solution Premium resolution (1080p60) H.323 and Session Initiation Protocol (SIP) up to 6 Mbps point to point 4X camera with integrated Camera 65 Inch LED High Definition Monitors with HDMI support.</p> <p>Flat Screen Dual display screen support HD & Full HD Support High Definition should be compatible with the solution proffered</p> <ul style="list-style-type: none"> • SERVICES Installation, Configuration, Commissioning, <p>Travel & Accommodation</p>	1 x Lusaka	
Telepresence Video Conferencing Unit	<p>Codec device complete with Camera, Mics, Speakers Support a room of 20 people Standards-compliant 1080p solution Premium resolution (1080p60) H.323 and Session Initiation Protocol (SIP) up to 6 Mbps point to point</p>	1 x Kariba Admin	

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	<p>4X camera with integrated Camera 65 Inch LED High Definition Monitors with HDMI support.</p> <p>Dual display screen support HD & Full HD Support</p> <p>High Definition should be compatible with the solution proffered</p> <ul style="list-style-type: none"> • SERVICES Installation, Configuration, Commissioning, Travel & Accommodation 		
<p>Telepresence Video Conferencing Unit</p>	<ul style="list-style-type: none"> • Codec device complete with Camera, Mics, Speakers • Support a room of 10 people. • Standards-compliant 1080p solution. • Premium resolution (1080p60). • H.323 and Session Initiation Protocol (SIP) up to 6 Mbps point to point • 4X camera with integrated Camera • 65 Inch LED High Definition Monitors with HDMI support. • Flat Screen • Dual display screen support • HD & Full HD Support • High Definition should be compatible with the solution proffered • SERVICES <ul style="list-style-type: none"> ○ Installation, Configuration, Commissioning, ○ Travel & Accommodation 	<p>1 x Harare</p>	
<p>Room</p>	<ul style="list-style-type: none"> • The Supplier should quote for the necessary room ambience facilities that will 	<p>Lusaka</p>	

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Ambience	enable the solution to work optimally		
Room Ambience	The Supplier should quote for the necessary room ambience facilities that will enable the solution to work optimally	Kariba Admin	
Room Ambience	The Supplier should quote for the necessary room ambience facilities that will enable the solution to work optimally	Harare	

Lot 3: EMAIL SECURITY GATEWAY SOLUTION: Cisco IronPort or Mimecast Solution

SERVICE FUNCTIONALITY/SPECIFICATIONS

- a) The Secure gateway service should automatically rewrite URL’s in email to point back to the gateway for security checking on each click by users.
- b) The Secure Gateway should convert documents when received to a safe copy and immediately send the information to the user to action. Users should have the availability to request the original document, which will be taken through a sandbox environment to check for malicious code.
- c) The Secure Gateway should perform multiple checks on inbound email to detect impersonation threats.
- d) A cloud based service to provide Email Continuity, Email Security, Email Archiving and Email Branding solution in a single hosted services to complement the existing Email Server environment, based on a subscription service is required.
- e) Guaranteed service that provides at least 100% service availability with a Punitive SLA as backing.
- f) Antivirus and Anti-Spam facilities must be provided along with Data Leak Prevention Services. Details thereof should be provided.
- g) Content Examination functions should be available where definitions can be put in place to prevent certain information either leaving the

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organization, or can be flagged for overview by a designated party before releasing.

- h) All Outbound, Inbound and Internal Email must not have an Archive Expiry applied.
- i) Seamless Continuity Services must be provided that allows end user access to email through Outlook, web and mobile device. No support calls should need to be logged.
- j) Outlook services must be able to make use of “single sign-on”. If Active Directory passwords are changed or expire users must not need to re-enter passwords into the service outlook client.
- k) Operational and Compliance modes of archiving must be provided.
- l) Email Branding Services are required in addition to the archive services described in point 2 above.
- m) Mobile device support for mobile platforms including iOS, Microsoft, BlackBerry & Android devices.
- n) The service must have the ability to pause inbound email delivery in the event of a Microsoft Exchange outage.
- o) The service must be LDAP Integrated.

Implementation and Support Services

- a) Implementation Services will be required for establishing connections between the email component e.g. Exchange Server and associated Client devices. Please provide a description of these services.
- b) Data Ingestion Services will be required to ingest email from existing emails stores (Exchange Server and PST files.
- c) An online service support and knowledgebase must be available freely without the need to log in.
- d) The provider of service must have a dedicated services desk that only provides support services to this solution.

Reporting and Monitoring

- a) A monitoring service must be available to alert administrators if Active Directory connectors fail, queues grow beyond thresholds or Journaling services fail.

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b) Scheduled reporting must be available that automatically email reports to Administrators.

Reports must provide the following at minimum.

- Malicious URL's detected over last 30 days
- Top users clicking on malicious URL's
- Malicious attachments detected over last 30 days
- Top users receiving malicious documents
- Email volume by day
- Email bandwidth by day
- Rejection overview
- Email statistics over time

Kariba Data Centre

Item	Technical Specification	Quantity	Supplier Technical Offer and Specifications <i>(provide a detailed specifications of the solution and comments on a SEPARATE SHEET)</i>
a.) Fire Detection and Suppression System	<p>The solution must use environmentally friendly HFC227ea Gas (FM200) or similar in accordance to ISO 14000 Standards. It must also be compliant with the following standard: BS5839, 5054, 5445 Part2, SAZ and EN54. The minimum solution must be as follows:</p> <ol style="list-style-type: none"> 1. Extinguisher Panel 3 Zone 1 Gas 2. Optical Smoke Detectors 3. Flashing beacon and sounder combination 4. HFC227ea Gas (FM200) 5. Warning sign entrance 6. Fire Bell 	1	
b.) Access Control	<p>Two x Biometric readers in and out access control per door with capacity to handle 30 users.</p> <ul style="list-style-type: none"> • System should have an audit trail of transactions & should be logged in a database. • System should be easily integrated into the building management 	2	

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	system if the need arise and further extended to be part of the building access control system		
c. Security and Environmental	<ol style="list-style-type: none"> 1. Rack Monitor 2. Temperature and Humidity Sensors 3. Smoke Sensors 	Set	
d.) Power Distribution System (APC)	<ol style="list-style-type: none"> 1. APC Smart-UPS SRT 10kVA / 10kW RM UPS 230V RACK MOUNTABLE UPS 2. Internal automatic and manual bypass system 3. Fully redundant for server room load, fire suppression and security systems. 	2	
e.) Precision (Row Based) Air Conditioning (PAC)-APC	<ol style="list-style-type: none"> 1. The cooling solutions should have internal redundant of components. 2. Cold and hot Aisle arrangement should be achieved. 3. Total cooling capacity is estimated using 8-2u rack mountable servers with a total power rating of 300watts. 4. Network manageable. 	1	
f.) Racks and Accessories (APC)	<ol style="list-style-type: none"> 1. 42U Rack Unit (600mm width) 2. Racks should come integrated with 32A dual feed PDU units 3. Overhead Cable management Troughs 4. 16 Port KVM Switches in each rack 5. KVM Cables for 10 Servers 6. 17 Inch Monitor, Keyboard and mouse for each rack 7. Overhead Data Cable Partitions. 	3	
g.) Partitioning	Half glazed Aluminum Partition with sections of 1hour fire rated gypsum boards and 6.5mm laminated glass with sliding doors.	1	

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h.) Server	Rack Mountable server for the installation of the access control system ,with a form factor of at most 2Us and should be a Dell, IBM or HP ,with redundant fans ,power supply units ,2 Processors and at least 12 GB of RAM,2TB HDD configured on RAID 5	1	
i.) Services	Startup and scheduled Assembly services to fully commission solution on a turnkey basis. Supplier should provide detailed floor plans for their proposal configuration of the server room.	1	

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Lusaka Data Centre

Item	Technical Specification	Quantity	Supplier Technical Offer and Specifications <i>(provide a detailed specifications of the solution and comments on a SEPARATE SHEET)</i>
a.) Fire Detection and Suppression System	<p>The solution must use environmentally friendly HFC227ea Gas (FM200) or similar in accordance to ISO 14000 Standards. It must also be compliant with the following standard: BS5839, 5054, 5445 Part2, SAZ and EN54. The minimum solution must be as follows:</p> <ol style="list-style-type: none"> 7. Extinguisher Panel 3 Zone 1 Gas 8. Optical Smoke Detectors 9. Flashing beacon and sounder combination 10. HFC227ea Gas (FM200) 11. Warning sign entrance 12. Fire Bell 	1	
b.) Access Control	<p>Two x Biometric readers in and out access control per door with capacity to handle 30 users.</p> <ul style="list-style-type: none"> • System should have an audit trail of transactions & should be logged in a database. • System should be easily integrated into the building management system if the need arise and further extended to be part of the building access control system 	2	

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c. Security and Environmental	<ol style="list-style-type: none"> 4. Rack Monitor 5. Temperature and Humidity Sensors 6. Smoke Sensors 	Set	
d.) Power Distribution System (APC)	<ol style="list-style-type: none"> 4. APC Smart-UPS SRT 10kVA / 10kW RM UPS 230V RACK MOUNTABLE UPS 5. Internal automatic and manual bypass system 6. Fully redundant for server room load, fire suppression and security systems. 	2	
e.) Precision (Row Based) Air Conditioning (PAC)-APC	<ol style="list-style-type: none"> 5. The cooling solutions should have internal redundant of components. 6. Cold and hot Aisle arrangement should be achieved. 7. Total cooling capacity is estimated using 8-2u rack mountable servers with a total power rating of 300watts 8. Network manageable. 	1	
f.) Racks and Accessories (APC)	<ol style="list-style-type: none"> 8. 42U Rack Unit (600mm width) 9. Racks should come integrated with 32A dual feed PDU units 10. Overhead Cable management Troughs 11. 16 Port KVM Switches in each rack 12. KVM Cables for 10 Servers 13. 17 Inch Monitor, Keyboard and mouse for each rack 14. Overhead Data Cable Partitions. 	3	
g.) Partitioning	Half glazed Aluminum Partition with sections of 1hour fire rated gypsum boards and 6.5mm laminated glass with sliding doors.	1	
h.) Server	Rack Mountable server for the installation of the access control system ,with a form factor of at most 2Us and should be a Dell, IBM or HP ,with redundant fans ,power supply units ,2 Processors and at least 12 GB of RAM,2TB HDD configured on RAID 5	1	

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i.) Services	Startup and scheduled Assembly services to fully commission solution on a turnkey basis. Supplier should provide detailed floor plans for their proposal configuration of the server room.	1	
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