**Specification for Sample IT Products**

**Category A (Network Products and Infrastructure Equipment)**

##### (To be completed and returned by email or uploading through e-Form)

1. Specifications of Add-on Hardware and Software Items

For each of those items **marked with an asterisk** in the first row of the relevant tables below in this Appendix, the applicant who applies to become GITP provider of the sub-category of Category A to which such item belongs must propose at least one model (together with all requested information) for such item in the form known as “[Details of Sample IT Products](https://www.digitalpolicy.gov.hk/en/our_work/digital_infrastructure/industry_development/suppliers/gitp/#product_form)” as well as in relevant table below to show its compliance with the [reference technical requirements](https://www.digitalpolicy.gov.hk/en/our_work/digital_infrastructure/industry_development/suppliers/gitp/#ref_tech_req) applicable to such item which are repeated in the relevant table below.

Whilst it is not mandatory to do so, for each of those items which are not marked with an asterisk in the tables below, the applicant applying to become a GITP provider of the relevant sub-category to which such item belongs may wish to propose one model (together with the requested information) for such item in the form known as “[Details of Sample IT Products](https://www.digitalpolicy.gov.hk/en/our_work/digital_infrastructure/industry_development/suppliers/gitp/#product_form)” as well as in the relevant table below to show its compliance with the [reference technical requirements](https://www.digitalpolicy.gov.hk/en/our_work/digital_infrastructure/industry_development/suppliers/gitp/#ref_tech_req) applicable to such item which are repeated in the relevant table below.

Applicants shall provide technical information to substantiate compliance of the proposed products with the aforesaid requirements.  Technical information in product literature published by the original manufacturers/developers and/or other supporting technical information shall be provided to prove compliance.

Sample illustration on the products to be proposed is provided in Enclosure of this Appendix for illustration purposes only.

* 1. Sub-category A1 - Network Router and Switch
     1. Router

|  |  |  |
| --- | --- | --- |
| **Router [Item No. 11000] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Network Interface | * Provide at least two (2) GbE optical or electrical interfaces |  |
| Routing Protocol | * Able to run OSPFv3 or multiprotocol BGP |  |
| High Availability | * Able to handle VRRP |  |
| Form Factor | * Rack mount |  |
| Others | * Bundled with all necessary cables and accessories including rack mount kit |  |
| Green Features | * Shall comply with mandatory requirement of Green Product Code D03 |  |

* + 1. Router Accessory 1

|  |  |  |
| --- | --- | --- |
| **Router Accessory 1 [Item No. 11011]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) power supply unit |  |
| Compatibility | * Compatible with the proposed router [Item No. 11000] |  |

* + 1. Router Accessory 2

|  |  |  |
| --- | --- | --- |
| **Router Accessory 2 [Item No. 11012]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide redundant processing module(s) which allows the router to continue operation through failover to the redundant module in the event of failure of a single module |  |
| Compatibility | * Compatible with the proposed router [Item No. 11000] |  |

* + 1. Router Accessory 3

|  |  |  |
| --- | --- | --- |
| **Router Accessory 3 [Item No. 11013]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) single transceiver |  |
| Compatibility | * Compatible with the proposed router [Item No. 11000] |  |

* + 1. Router Accessory 4

|  |  |  |
| --- | --- | --- |
| **Router Accessory 4 [Item No. 11014]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) single module port adapter |  |
| Compatibility | * Compatible with the proposed router [Item No. 11000] |  |

* + 1. Router Accessory 5

|  |  |  |
| --- | --- | --- |
| **Router Accessory 5 [Item No. 11015]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide layer 2 and layer 3 routing or network segmentation feature(s) |  |
| Implementation Method | * Implement either (a) through the addition of new module(s) or (b) through the activation of module(s) already included in the proposed router [Item No. 11000] |  |

* + 1. Router Accessory 6

|  |  |  |
| --- | --- | --- |
| **Router Accessory 6 [Item No. 11016]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide virtural extensible local area network (VXLAN) or multiprotocol label switching (MPLS) or policy base routing feature(s) |  |
| Compatibility | * Compatible with the proposed router [Item No. 11000] |  |

* + 1. Router Accessory 7

|  |  |  |
| --- | --- | --- |
| **Router Accessory 7 [Item No. 11017]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide network security feature(s) |  |
| Compatibility | * Compatible with the proposed router [Item No. 11000] |  |

* + 1. Router Accessory 8

|  |  |  |
| --- | --- | --- |
| **Router Accessory 8 [Item No. 11018]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide cellular connection adaptor |  |
| Compatibility | * Compatible with the proposed router [Item No. 11000] |  |

* + 1. Router Accessory 9

|  |  |  |
| --- | --- | --- |
| **Router Accessory 9 [Item No. 11019]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) memory module |  |
| Compatibility | * Compatible with the proposed router [Item No. 11000] |  |

* + 1. Router Accessory 10

|  |  |  |
| --- | --- | --- |
| **Router Accessory 10 [Item No. 11020]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) single expansion module for enchancement feature |  |
| Compatibility | * Compatible with the proposed router [Item No. 11000] |  |

* + 1. Router Accessory 11

|  |  |  |
| --- | --- | --- |
| **Router Accessory 11 [Item No. 11021]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Increase the routing performance of the proposed router |  |
| Compatibility | * Compatible with the proposed router [Item No. 11000] |  |

* + 1. Switch

|  |  |  |
| --- | --- | --- |
| **Switch [Item No. 11001] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Network Interface | * Provide at least twenty-four (24) GbE interfaces |  |
| Packet Forwarding Performance | * Provide at least 60Mpps |  |
| High Availability | * Able to handle VRRP |  |
| Form Factor | * Rack mount |  |
| Others | * Bundled with all necessary cables and accessories including rack mount kit |  |
| Green Features | * Shall comply with mandatory requirement of Green Product Code D03 |  |

* + 1. Switch Accessory 1

|  |  |  |
| --- | --- | --- |
| **Switch Accessory 1 [Item No. 11051]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) power supply unit |  |
| Compatibility | * Compatible with the proposed switch [Item No. 11001] |  |

* + 1. Switch Accessory 2

|  |  |  |
| --- | --- | --- |
| **Switch Accessory 2 [Item No. 11052]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide redundant processing module(s) which allows the switch to continue operation through failover to the redundant module in the event of failure of a single module |  |
| Compatibility | * Compatible with the proposed switch [Item No. 11001] |  |

* + 1. Switch Accessory 3

|  |  |  |
| --- | --- | --- |
| **Switch Accessory 3 [Item No. 11053]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) single transceiver |  |
| Compatibility | * Compatible with the proposed switch [Item No. 11001] |  |

* + 1. Switch Accessory 4

|  |  |  |
| --- | --- | --- |
| **Switch Accessory 4 [Item No. 11054]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) single module port adapter |  |
| Compatibility | * Compatible with the proposed switch [Item No. 11001] |  |

* + 1. Switch Accessory 5

|  |  |  |
| --- | --- | --- |
| **Switch Accessory 5 [Item No. 11055]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) stacking module with at least two (2) 40Gbps interfaces |  |
| Compatibility | * Compatible with the proposed switch [Item No. 11001] |  |

* + 1. Switch Accessory 6

|  |  |  |
| --- | --- | --- |
| **Switch Accessory 6 [Item No. 11056]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) stacking cable |  |
| Compatibility | * Compatible with the proposed switch [Item No. 11001] |  |

* + 1. Switch Accessory 7

|  |  |  |
| --- | --- | --- |
| **Switch Accessory 7 [Item No. 11057]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) hot-swappable fan module |  |
| Compatibility | * Compatible with the proposed switch [Item No. 11001] |  |

* + 1. Switch Accessory 8

|  |  |  |
| --- | --- | --- |
| **Switch Accessory 8 [Item No. 11058]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide virtural extensible local area network (VXLAN) feature |  |
| Compatibility | * Compatible with the proposed switch [Item No. 11001] |  |

* + 1. Switch Accessory 9

|  |  |  |
| --- | --- | --- |
| **Switch Accessory 9 [Item No. 11059]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide network security feature |  |
| Compatibility | * Compatible with the proposed switch [Item No. 11001] |  |

* + 1. Switch Accessory 10

|  |  |  |
| --- | --- | --- |
| **Switch Accessory 10 [Item No. 11060]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide the multiprotocol label switching (MPLS) layer 3 VPN services for the proposed switch |  |
| Compatibility | * Compatible with the proposed switch [Item No. 11001] |  |

* + 1. Switch Accessory 11

|  |  |  |
| --- | --- | --- |
| **Switch Accessory 11 [Item No. 11061]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide layer 3 routing protocol support for the proposed Switch |  |
| Compatibility | * Compatible with the proposed switch [Item No. 11001] |  |

* + 1. Switch Accessory 12

|  |  |  |
| --- | --- | --- |
| **Switch Accessory 12 [Item No. 11062]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide BGP support for the proposed switch |  |
| Compatibility | * Compatible with the proposed switch [Item No. 11001] |  |

* + 1. Switch Accessory 13

|  |  |  |
| --- | --- | --- |
| **Switch Accessory 13 [Item No. 11063]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide MACsec support for the proposed switch |  |
| Compatibility | * Compatible with the proposed switch [Item No. 11001] |  |

* 1. Sub-category A2 - Wireless Network Equipment
     1. Wireless Controller

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| --- | --- | --- |
| **Wireless Controller [Item No. 12000] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Network Interface | * Provide at least one (1) GbE optical interface * Provide at least four (4) 1000BASE-T interfaces |  |
| Wireless Interface | * 802.11ax |  |
| Performance | * Support up to at least 40 access points * Support up to at least 300 clients * Support up to at least 4,000 VLANs |  |
| Form Factor | * Rack mount |  |
| Others | * Bundled with all necessary cables and accessories including rack mount kit |  |
| Green Features | * Shall comply with mandatory requirement of Green Product Code D03 |  |

* + 1. Wireless Equipment Accessory 1

|  |  |  |
| --- | --- | --- |
| **Wireless Equipment Accessory 1 [Item No. 12011]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) power supply unit |  |
| Compatibility | * Compatible with the proposed wireless controller [Item No. 12000] |  |

* + 1. Wireless Equipment Accessory 2

|  |  |  |
| --- | --- | --- |
| **Wireless Equipment Accessory 2 [Item No. 12012]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) single transceiver |  |
| Compatibility | * Compatible with the proposed wireless controller [Item No. 12000] |  |

* + 1. Wireless Equipment Accessory 3

|  |  |  |
| --- | --- | --- |
| **Wireless Equipment Accessory 3 [Item No. 12013]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide access controller licences |  |
| Compatibility | * Compatible with the proposed wireless controller [Item No. 12000] |  |

* + 1. Wireless Access Point

|  |  |  |
| --- | --- | --- |
| **Wireless Access Point [Item No. 12001] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Network Interface | * Provide at least one (1) GbE 802.3af or better power-over-ethernet (PoE) interface |  |
| Wireless Interface | * 802.11ax * Support multi-user, multi-in multi-out (MU-MIMO) * Support wireless LAN controller mode |  |
| Others | * Bundled with all necessary cables and accessories including rack mount kit |  |
| Green Features | * Shall comply with mandatory requirement of Green Product Code D03 |  |

* + 1. Wireless Router

|  |  |  |
| --- | --- | --- |
| **Wireless Router [Item No. 12002] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Network Interface | * Provide at least four (4) GbE interfaces |  |
| Wireless Interface | * 802.11ax * Support multi-user, multi-in multi-out (MU-MIMO) |  |
| High Availability | * Able to handle VRRP |  |
| Others | * Bundled with all necessary cables and accessories including rack mount kit |  |
| Green Features | * Shall comply with mandatory requirement of Green Product Code D03 |  |

* 1. Sub-category A3 - Network Load Balancer
     1. Load Balancer

|  |  |  |
| --- | --- | --- |
| **Load Balancer [Item No. 13000] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Network Interface | * Provide at least two (2) 10GbE interfaces * Provide at least four (4) GbE interfaces |  |
| Feature | * Perform load balancing based on IP-based protocols |  |
| Application Throughput | * Provide at least 6Gbps application throughput (Layer 4 / Layer 7) |  |
| Form Factor | * Rack mount |  |
| Others | * Bundled with all necessary cables and accessories including rack mount kit |  |
| Green Features | * Shall comply with mandatory requirement of Green Product Code D03 |  |

* + 1. Load Balancer Accessory 1

|  |  |  |
| --- | --- | --- |
| **Load Balancer Accessory 1 [Item No. 13011]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) power supply unit |  |
| Compatibility | * Compatible with the proposed network load balancer [Item No. 13000] |  |

* + 1. Load Balancer Accessory 2

|  |  |  |
| --- | --- | --- |
| **Load Balancer Accessory 2 [Item No. 13012]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) single transceiver |  |
| Compatibility | * Compatible with the proposed network load balancer [Item No. 13000] |  |

* + 1. Load Balancer Accessory 3

|  |  |  |
| --- | --- | --- |
| **Load Balancer Accessory 3 [Item No. 13013]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Increase the Layer 4 connections per second performance |  |
| Compatibility | * Compatible with the proposed network load balancer [Item No. 13000] |  |

* + 1. Load Balancer Accessory 4

|  |  |  |
| --- | --- | --- |
| **Load Balancer Accessory 4 [Item No. 13014]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide annual subscription for regularly automatic update of IP reputation database and control of malicious IP address categories including Phishing, Denial of Service and Botnets for the proposed Load Balancer |  |
| Compatibility | * Compatible with the proposed network load balancer [Item No. 13000] |  |

* 1. Sub-category A4 – Network and Infrastructure Security Equipment
     1. UTM Firewall

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| --- | --- | --- |
| **UTM Firewall [Item No. 14000] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Network Interface | * Provide at least four (4) GbE interfaces |  |
| Feature | * Provide single sign-on with Microsoft Active Directory, LDAP or equivalent directory service for enforcing user-based access control * Support IPS, anti-virus, web filtering and anti-spam services |  |
| Certification | * Conform to   1. ISO/IEC 15408; or   2. GB/T 18336-2015; or   3. GB/T 20281-2015 or above |  |
| Firewall Throughput | * Provide at least 0.5Gbps (1500 bytes or larger IP packet) |  |
| Form Factor | * Rack mount |  |
| Others | * Bundled with all necessary cables and accessories including rack mount kit |  |
| Green Features | * Shall comply with mandatory requirement of Green Product Code D03 |  |

* + 1. UTM Firewall Accessory 1

|  |  |  |
| --- | --- | --- |
| **UTM Firewall Accessory 1 [Item No. 14011]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) power supply unit |  |
| Compatibility | * Compatible with the proposed UTM firewall [Item No. 14000] |  |

* + 1. UTM Firewall Accessory 2

|  |  |  |
| --- | --- | --- |
| **UTM Firewall Accessory 2 [Item No. 14012]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) single transceiver |  |
| Compatibility | * Compatible with the proposed UTM firewall [Item No. 14000] |  |

* + 1. UTM Firewall Accessory 3

|  |  |  |
| --- | --- | --- |
| **UTM Firewall Accessory 3 [Item No. 14013]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide IPS, anti-Virus, web filtering and anti-Spam services for the proposed UTM firewall |  |
| Compatibility | * Compatible with the proposed UTM firewall [Item No. 14000] |  |

* + 1. UTM Firewall Accessory 4

|  |  |  |
| --- | --- | --- |
| **UTM Firewall Accessory 4 [Item No. 14014]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Manage multiple devices for creating policy and object, as well as providing centralised software updates |  |
| Compatibility | * Compatible with the proposed UTM firewall [Item No. 14000] |  |

* + 1. UTM Firewall Accessory 5

|  |  |  |
| --- | --- | --- |
| **UTM Firewall Accessory 5 [Item No. 14015]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Measure and analyse the performance of network devices such as the utilisation of processor, memory or network interface on the device |  |
| Compatibility | * Compatible with the proposed UTM firewall [Item No. 14000] |  |

* + 1. Web Application Firewall

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| --- | --- | --- |
| **Web Application Firewall 1 [Item No. 14001] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Network Interface | * Provide at least five (5) GbE interfaces * Support up to at least two (2) GbE optical interface |  |
| Certification | * Conform to   1. ISO/IEC 15408; or   2. GB/T 32917-2016 or above; or   3. GB/T 20281-2015 or above |  |
| HTTP Traffic Throughput | * Provide at least 200Mbps * Support up to at least 50,000 concurrent established connections |  |
| Form Factor | * Rack mount |  |
| Others | * Bundled with all necessary cables and accessories including rack mount kit |  |
| Green Features | * Shall comply with mandatory requirement of Green Product Code D03 |  |

* + 1. Web Application Firewall Accessory 1

|  |  |  |
| --- | --- | --- |
| **Web Application Firewall Accessory 1 [Item No. 14031]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) power supply unit |  |
| Compatibility | * Compatible with the proposed web application firewall [Item No. 14001] |  |

* + 1. Web Application Firewall Accessory 2

|  |  |  |
| --- | --- | --- |
| **Web Application Firewall Accessory 2 [Item No. 14032]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Increase the HTTP traffic throughput of the proposed web application firewall |  |
| Compatibility | * Compatible with the proposed web application firewall [Item No. 14001] |  |

* + 1. Network Threat Protection Appliance

|  |  |  |
| --- | --- | --- |
| **Network Threat Protection Appliance [Item No. 14002] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Network Interface | * Provide at least six (6) GbE interfaces |  |
| Storage | * Provide at least 4TB local storage |  |
| Advanced Threat Protection Throughput | * Shall provide sandboxing at least 150 files per hour |  |
| Form Factor | * Rack mount |  |
| Others | * Bundled with all necessary cables and accessories including rack mount kit |  |
| Green Features | * Shall comply with mandatory requirement of Green Product Code D03 |  |

* + 1. Network Threat Protection Appliance Accessory 1

|  |  |  |
| --- | --- | --- |
| **Network Threat Protection Appliance Accessory 1 [Item No. 14051]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) power supply unit |  |
| Compatibility | * Compatible with the proposed network threat protection appliance [Item No. 14002] |  |

* + 1. Security Policy Management Appliance

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| --- | --- | --- |
| **Security Policy Management Appliance [Item No. 14070]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Authentication of various network devices such as firewalls, routers, switches, servers and End point devices * Provide full AAA server – RADIUS or TACACS+ * Authentication or authorisation support for at least one of LDAP, AD, Kerberos, Token Server, SQL compliant database * Monitor real time authentication status of network devices through web browser * Display alert message when detecting authentication problem in the network * Provide role-based and device-based secure network access control * Allow remote management through web browser |  |

* 1. Sub-category A5 - Network Software
     1. Network Management Software

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| --- | --- | --- |
| **Network Management Software 1 [Item No. 15000] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Features | * Manage network devices * Provide traffic logging and reporting features * Able to do audit configuration changes to ensure compliance * Able to scheduling device updates |  |

* + 1. Network Monitoring Software

|  |  |  |
| --- | --- | --- |
| **Network Monitoring Software [Item No. 15001] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Features | * Monitor the performance of at least 100 network devices such as firewalls, routers, switches, servers and other SNMP-enabled devices * Provide tool to measure and analyse the performance of network devices such as the utilisation of processor, memory or network interface on the device * Provide tool to view the real time performance of network devices through web browser * Display alert message when detecting problem in the network |  |

* + 1. Network Virtual Security Appliance

|  |  |  |
| --- | --- | --- |
| **Network Virtual Security Appliance 1 [Item No. 15002] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Features | * Provide real-time monitoring of malware * Support integration with firewall for inline blocking * Support Internet Content Adaptation Protocol (ICAP) integration |  |
| Others | * Virtual Appliance with support of common virtualisation platforms |  |

* + 1. Network Traffic Analysis Software

|  |  |  |
| --- | --- | --- |
| **Network Traffic Analysis Software [Item No. 15010]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide tool to measure and analyze the performance of network devices |  |

* + 1. Network Software Licenses and Accessories

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| --- | --- | --- |
| **Network Software Licenses and Accessories [Item No. 15030]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Provide anti-virus or web filtering or anti-spam services |  |

* 1. Sub-category A6 - Power Equipment
     1. Uninterruptible Power Supply

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| --- | --- | --- |
| **Uninterruptible Power Supply 1 [Item No. 16000] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Voltage | * Supply 220V sine wave AC power during normal operation * Accept utility AC power input |  |
| Output Capacity | * 1000VA |  |
| Battery Capacity | * Shall be able to last at least five (5) minutes at 700W load during power outages |  |
| Power Protection | * Shall be able to regulate the output voltage against sags, spike and surge |  |
| Others | * With minimum four (4) output power receptacles * With audible alarms and visual indicators for generating alerts when the uninterruptible power supply is running on battery * Provide battery free of charge to maintain the UPS in proper working order so long as the Uninterruptible Power Supply is under Maintenance Services |  |

* + 1. Uninterruptible Power Supply Accessory

|  |  |  |
| --- | --- | --- |
| **Uninterruptible Power Supply Accessory [Item No. 16011]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) UPS network management card * Connect a UPS to the network by Ethernet, serial or USB port * Allow remote control and monitoring of a UPS through the network * Support open standard protocols such as HTTP or SNMP * Provide logging functions |  |
| Compatibility | * Compatible with the proposed Uninterruptible Power Supply [Item No. 16000] |  |

* + 1. Automatic Transfer Switch

|  |  |  |
| --- | --- | --- |
| **Automatic Transfer Switch 1 [Item No. 16001] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Automatic transfer of electrical load from primary power source to secondary power source upon the failure of the primary power source |  |
| Form Factor | * Rack mount * 1U |  |
| Voltage | * 200-230V AC power during normal operation |  |
| Output Current | * 10A |  |
| Output Connections | * At least ten (10) IEC 60320 C13 |  |

* 1. Sub-category A7 - Cabinet
     1. Rack Cabinet

|  |  |  |
| --- | --- | --- |
| **Rack Cabinet [Item No. 17000] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Standard | * EIA 19-inch cabinet compliant |  |
| External Height | * 9 - 47U |  |
| Power Bar | * At least one (1) 6 sockets power bar with sockets type of BS1363 or IEC C13 or C19 |  |
| Rack Shelf | * Optional provide rack shelf |  |
| Security | * Cabinet door with lock |  |

* + 1. Rack Cabinet Accessory 1

|  |  |  |
| --- | --- | --- |
| **Rack Cabinet Accessory [Item No. 17011]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Rack air distribution unit * EIA 19-inch cabinet compliant * Less than 3U * At least two (2) cooling fans * Airflow at least 14 m3/min cubic metres per minute |  |

* + 1. LCD KVM Console

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| --- | --- | --- |
| **LCD KVM Console [Item No. 17001] \*** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Standard | * EIA 19-inch cabinet compliant |  |
| Form Factor | * Rack mount * 1U |  |
| Console | * At least an integrated 19" LED-backlit LCD panel |  |
| Feature | * Control and manage at least eight (8) computers using a single keyboard drawer (with touchpad) |  |

* + 1. LCD KVM Console Accessory 1

|  |  |  |
| --- | --- | --- |
| **LCD KVM Console Accessory 1 [Item No. 17031]** | | |
| Model / Feature No. (1) | |  |
| Product Description (1) | |  |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * Cable accessories for connecting server or computer equipment |  |
| Compatibility | * Compatible with the proposed LCD KVM Console [Item No. 17001] |  |

* 1. Sub-category A8 - Network Cable
     1. Network Cable

| **Network Cable [Item No. 18000] \*** | | |
| --- | --- | --- |
| *Specifications* | | |
| **Product Requirement** | **Model / Feature No. (1)** | **Product Description (1)** |
| OM3 multi-mode or OS2 single-mode fibre patch cord or above / OM3 multi-mode or OS2 single-mode fibre cable or above / Cat 6 8P8C (“RJ45”) patch cord or above / cat 6 8P8C (“RJ45”) cable or above |  |  |

* + 1. Cable Accessories

| **Cabling Accessories [Item No. 18011 - 18022]** | | | |
| --- | --- | --- | --- |
| *Specifications* | | | |
| **Item No.** | **Product Requirement** | **Model / Feature No. (1)** | **Product Description (1)** | |
| 18011 | QSFP+ to 4 SFP+ direct attach copper Cables (5 metres) |  |  | |
| 18012 | QSFP+ to QSFP+ direct attach copper cable (5 metres) |  |  | |
| 18013 | Fibre patch panel 24-ports (1U) |  |  | |
| 18014 | Fibre patch panel 12-ports (1U) |  |  | |
| 18015 | UTP cat 6 RJ45 Plugs (100 pieces/Pack) |  |  | |
| 18016 | RJ-45 cable tester |  |  | |
| 18017 | PVC conduit |  |  | |
| 18018 | Cat 6 patch panel 48-port (1U) |  |  | |
| 18019 | Cat 6 patch panel 24-port (1U) |  |  | |
| 18020 | Cat 6 patch panel 16-port (1U) |  |  | |
| 18021 | Cable management panel with front cover (1U) |  |  | |
| 18022 | GbE to fiber media converter |  |  | |

Notes:

(1) Information given on brand, name, model or feature number and manufacturer shall be able to uniquely identify the proposed product. Accessories (e.g. mounting kit, cable, power cord, additional RAM, etc.) to be delivered along with each proposed Hardware and Software items should be specified clearly in the “Product Description”. If the proposed product is a bundle of several items (items other than accessories), the aforesaid information shall be given with respect to each bundled item and in the same sequence. If there are any discrepancies between the information given in this form and accompanying technical literature, subject to any clarification which may be made by the Government, the accompanying technical literature shall prevail.

(2) Applicants shall state the exact location of the technical information as found in the product literature published by the original manufacturers/developers and/or other supporting technical information in the proposal (Filename/Section/Page).

Sample Illustration - Specifications of Add-on Hardware and Software Items

Sub-category A1 - Network Router and Switch [Ref.: Section 1.1 of this Appendix]

Router [Ref.: Section 1.1.1 of this appendix]

|  |  |  |
| --- | --- | --- |
| **Router [Item No. 11000] \*** | | |
| Model / Feature No. (1) | | AAB-CR888  AAB-PWR066 |
| Product Description (1) | | CR888 Chassis Router  Including:  650W Power Supply Unit |
| **Specifications** | | |
| Specifications Reference (2) | | Vol.1/Pt.3/App F/Sect2.1.13/Page 9-11 - AAB-CR888 data sheet |
| Network Interface | * Provide at least two (2) GbE optical or electrical interfaces | * Two (2) GbE optical interfaces * Two (2) GbE transceivers |
| Routing Protocol | * Able to run OSPFv3 or multiprotocol BGP | * Able to run OSPFv3 * Able to run multiprotocol BGP |
| High Availability | * Able to handle VRRP |  |
| Form Factor | * Rack mount | * Rack mount, 2U |
| Others | * Bundled with all necessary cables and accessories including rack mount kit | * Bundle with all necessary cables and accessories including rack mount kit |
| Green Features | * Shall comply with mandatory requirement of Green Product Code D03 | * Comply with mandatory requirement of Green Product Code D03 |

Router Accessory 1 [Ref.: Section 1.1.2 of this appendix]

|  |  |  |
| --- | --- | --- |
| **Router Accessory 1 [Item No. 11011]** | | |
| Model / Feature No. (1) | | AAB-PWR066 |
| Product Description (1) | | 300W power supply unit for AAB-CR888 |
| **Specifications** | | |
| Specifications Reference (2) | | Vol.1/Pt.3/App F/Sect2.1.17/Page 17 - AAB-PWR066 data sheet |
| Feature | * One (1) power supply unit | * One (1) 650W power supply unit |
| Compatibility | * Compatible with the proposed router [Item No. 11000] | * Compatible with the proposed Router 3 [Item No. 10030] |

Router Accessory 2 [Ref.: Section 1.1.3 of this appendix]

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| --- | --- | --- |
| **Router Accessory 2 [Item No. 11012]** | | |
| Model / Feature No. (1) | | N/A |
| Product Description (1) | | Failover feature is included in Router |
| **Specifications** | | |
| Specifications Reference (2) | | Vol.1/Pt.3/App F/Sect2.1.14/Page 13 - CSE-X2 data sheet |
| Feature | * Provide redundant processing module(s) which allows the router to continue operation through failover to the redundant module in the event of failure of a single module | Failover feature is included in the proposed Router |
| Compatibility | * Compatible with the proposed router [Item No. 11000] | Failover feature is included in the proposed Router [Item No. 11000] |

Router Accessory 4 [Ref.: Section 1.1.5 of this appendix]

|  |  |  |
| --- | --- | --- |
| **Router Accessory 4 [Item No. 11014]** | | |
| Model / Feature No. (1) | | CSE-FX100 |
| Product Description (1) | | Flex Interface CSE-FX100 for AAB-CR888 |
| **Specifications** | | |
| Specifications Reference (2) | |  |
| Feature | * One (1) single module port adapter | * One (1) single module port adapter with two (2) 10GbE and eight (8) GbE interfaces |
| Compatibility | * Compatible with the proposed router [Item No. 11000] | * Compatible with the proposed Router [Item No. 11000] |