Supply, Support and Maintenance Framework Tender for Packet Layer Routing and Switching Equipment

**Volume 2 - Invitation to Submit Outline Proposals**

Provision, Delivery, Installation, Support of IP Routing, Switching & Ancillary Equipment for the **UbuntuNet Alliance**

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# Guidance Notes for Bidders

* + - * 1. This “Invitation to Submit Outline Proposals (ITSOP)” is Volume 2 of a set of 3 (0 to 3), comprising the Descriptive Document relating to this competitive dialogue procurement exercise. Before completing this ITSOP, Bidders should familiarise themselves with the procurement process as described in Volume 0, “Information for Bidders”.
        2. Please return a completed version, by answering the questions in Section 3, and all correspondence through the [procurement@ubuntunet.net](mailto:procurement@ubuntunet.net) email address.
        3. “You”/ “Your” or “Bidder” means the body completing these questions i.e. the legal entity seeking to be invited to the next stage of the procurement process and responsible for the information provided.
        4. Bidders must ensure that all questions are completed accurately and concisely and in the format requested in accordance with the Requirements at Section Error: Reference source not found. Failure to do so may result in a Bidder’s submission being disqualified. If the question does not apply to you as the Bidder, please state clearly ‘N/A’ and explain why.
        5. Where a “Yes” or “No” answer is required, Bidders shall mark the relevant checkbox so as not to create ambiguity for evaluators. Any uncertainty should be raised by the Bidders through clarifications via the electronic mail to procurement@ubuntunet.net before submitting their response.
        6. Information must be entered into the appropriate answer boxes except where additional documentation is required or specifically requested.
        7. Should you need to provide additional Appendices in response to the questions, these should be numbered clearly and listed as part of your declaration. A template for providing additional information is provided at Error: Reference source not found.
        8. Bidders should not alter any questions set out in the ITSOP in their response. At the final stage – note that this is the primary or first stage of the process, any amended questions will not be evaluated and a score of zero will be applied in that scenario.
        9. *However at this stage, if a question can be improved or augmented to support a better response, Bidders are invited to suggest such improvements in the comments annex provided at the end of this Volume 2*
        10. Bidders should not cross-reference their answer to one question in their answer to another, even where there is commonality.
        11. The Alliance may disregard any part of an answer to a question that exceeds the word limit (where one is specified) or when a response is considered disproportionate. For example do not submit what may be considered standard sales literature as part of your bid where it adds little or no value to the evaluation process.

# Introduction

* + - * 1. The overall objective of the AfricaConnect project is to contribute to the reduction of poverty and the digital divide by harnessing the potential of Information and Communication Technologies (ICTs) for sustainable development in Africa. The project seeks to do this through facilitating the creation, development and use of regional education and research communication networks and high-capacity Internet connectivity with a gateway to global research collaboration.
        2. This EC / UA funded project will improve connectivity, specifically in those countries in Eastern and Southern Africa whose National Research and Education Networks (NRENs) are members of UbuntuNet Alliance and are technically and legally ready. The action will consolidate, upgrade and extend UbuntuNet, the regional research and education network – building in resilience and extending its reach to new countries in the region. In addition to those countries that are already members of UbuntuNet Alliance, this action will also target those countries in the region that are not yet members of UbuntuNet Alliance and work with them to join the Alliance and connect to the network. This action will also include roll out of EDUROAM along with Authentication and Authorisation Infrastructure (AAI) and training.
        3. The project also aims to increase intra-regional and international communication and collaboration between research centres and universities, including the increased use of online applications for research cooperation. To this end, the capacity being sought under this tender exercise will support the use of the regional networks for **non-commercial** e-applications by end users (students, researchers, doctors), including video conferencing infrastructure. To ensure sustainability the action will be accompanied by capacity building activities with the aim of transferring the necessary managerial, technical and operational skills required to run and operate NRENs and associated research and education applications. More effort by the EU will also be put on increasing political dialogue to raise political and financial support for connectivity issues for research and education communities, and among funding organisations and national governments.
        4. The current phase of the EC funding is called AfricaConnect3, which consolidates and expands the results of previous projects in contributing to enhance human capital development in Africa (the Overall Objective of the AC3 Grant Action).
        5. By facilitating access to educational and research resources and enabling research collaboration, AfricaConnect3 aims to support the digital transformation of those sectors and digital skills development.
        6. The Action is being managed through four different grant contracts which all contribute to the implementation of a coherent action composed of common work packages.
        7. In order to address the different challenges faced by NRENs and RRENs, the Action will work at different levels:

Output 1: The access to tertiary education and research institutions will be enhanced by establishing secure, adequate and affordable network infrastructures, such as high-speed broadband connectivity;

Output 2: The development of Research and Education through dedicated services, applications and user support will be fostered;

Output 3: Adequate human resource capacities and expertise will be built within RRENs and NRENs

* + - * 1. UbuntuNet Alliance is the implementing partner in Africa for Cluster 1 under the AfricaConnect project. having the capacity to administratively and technically manage the project and network as a standalone entity.
        2. This tender is for the supply of equipment and services to support the extant network infrastructure, details of which can be found in the Annexes. The equipment currently in use started to be rolled out in 2013, and then a second phase during 2017/8. The Alliance has an immediate need to support and augment the extant network in the short term. In the medium to long term the Alliance will need to determine a replacement strategy for the packet layer equipment and it is intended that the framework agreement established as a result of this tender exercise will be able to support the same. This will be a gradual phasing out of the existing Juniper network equipment, during the lifetime of this contract so as to support higher speed links (40/100 Gbps) as they become affordable.
        3. However, the need to support the existing estate, as well as being able to augment existing equipment as we upgrade and improve the network in the near and mid-term is paramount. This will include the creation of a number of new smaller PoPs for increased network resilience as well as reaching newly joining NRENs.
        4. The resultant framework or frameworks awarded as a result of this tender exercise, will be used for sourcing and supporting equipment purchased under the current phase of EC funding under AC3 as well as possible future funding from further grants that may be awarded by DG INTPA under the AfricaConnect programme.

# Scope

* + - * 1. The aim of this tender exercise is to establish one or more Framework Agreements for the supply and support of packet layer routing equipment and services, for use within the research network in south and east Africa – the UbuntuNet.
        2. The winning bidder(s) will be able to demonstrate their ability to supply and support a range of IP routing equipment, support the existing Juniper estate, and be capable of managing international logistics and deployment within the region.
        3. Bidders should note that we require support for the Juniper estate as it exists today, and noting that it is preferable to have a homogenous infrastructure and operating system, be advised that, ***in principle,*** the Alliance has no specific objection to operating new equipment from an OEM other than Juniper, in parallel, on the network at some future point, if the financial conditions dictate that such an approach is beneficial.
        4. Therefore, bidders should be able to evidence their capability and breadth of offering beyond Juniper equipment as part of their responses. The scope, therefore, is the supply and support of packet layer routing and switching equipment, and not limited to a single manufacturer or reseller.
        5. The scope of this tender is the establishment of one or more Framework Agreement(s) for the supply, support, delivery, installation, configuration and optimisation packet layer routing and switching equipment and software.

# EVALUATION CRITERIA

* + - * 1. Bidders are required to submit a series of responses to the questions in this Volume 2. The project team will evaluate responses to the questions in accordance with the Evaluation Criteria published in this section. Bidders must confirm their compliance with all parts of the ITSOP identified as “mandatory”. Non-compliance at this stage in relation to mandatory parts of the ITSOP **will not** result in rejection but you must explain why so that we can ensure that the final requirements document in the Invitation to Submit Final Bids (ITSFB) is correctly specified.
        2. UbuntuNet Alliance will reserve the right (at the final stage) to reject offers that do not meet the minimum standards of the project, where stated.
        3. Each response will be examined by the evaluation panel to establish the degree to which it meets the requirements of the Project. The responses to the applicable Questions set out within the ITSOP will be evaluated by determining a score (0-5) to the response for each question. The scoring criteria descriptors below (table 2.1) define how the Bidder’s response to each question will be evaluated.

|  |  |  |
| --- | --- | --- |
| Score | Criteria | Judgement |
| 5 | Response provides a clear and comprehensive solution to the project’s requirements, which is supported by evidence (where relevant) and which presents no concerns in relation to deliverability and/or performance and/or transfer of risk to the project. | Fully meets the stated requirements |
| 3 | Response provides a clear and comprehensive solution to the project’s requirements but there are minor deficiencies in the evidence provided (where relevant) and minor concerns in relation to deliverability and/or performance and/or transfer of risk to the project. | Minor Reservations |
| 1 | Response provides a solution to the project’s requirements but there are major deficiencies in the evidence provided (where relevant) and major concerns in relation to deliverability and/or performance and/or transfer of risk to the project. | Significant Reservations |
| 0 | The response does not meet requirements. | Not Answered / Unacceptable |

Table 2.1 – Scoring

* + - * 1. The project team reserve the right to consider answers to one question where it may support the evaluation of another question.
        2. The Evaluation Criteria is set out with Table 2.2 below. The team will evaluate the response to the questions set out in this tender in accordance with the stated criteria. The outline evaluation criteria been defined as follows (and are explained in more detail in Table 2.2);
* Commercial - Total Cost of Ownership over the life of the Contract
* Quality aspects of the Solution

| **Eval criteria** | **Main weighting** | **Sub weighting** | **Number** | **Stated requirement** | **Score guidance** |
| --- | --- | --- | --- | --- | --- |
| Quality - Technical Service Delivery | 40% |  | Compliance statement | Compliance statement that needs agreement from all bidders | Pass or Fail |
| 5% | Q1 | Delivery Approach | Score 0-5 |
| 5% | Q2 | Delivery Plan | Score 0-5 |
|  | Compliance statement | Compliance statement that needs agreement from all bidders | Pass or Fail |
| 2% | Q3 | Installation and Commissioning | Score 0-5 |
| 3% | Q4 | Installation and Commissioning Part II | Score 0-5 |
|  | Compliance statement | Compliance statement that needs agreement from all bidders |  |
| 15% | Q5 | Support processes | Score 0-5 |
| 25% | Q6 | Support logistics and infrastructure | Score 0-5 |
|  |  |  |  |  |
| Quality - Software |  | Compliance statement | Compliance statement that needs agreement from all bidders | Pass or Fail |
|  |  |  |  |  |
| Quality - Routing hardware |  | Compliance statement | Technical Compliance statement that needs agreement from all bidders | Pass or Fail |
| 12% | Q7 | Information about software for routing equipment | Score 0-5 |
| 25% | Q8 | Technical Specification | Score 0-5 |
|  |  |  |  |  |
| Quality - Ancillary equipment |  | Compliance statement | Technical Compliance statement that needs agreement from all bidders | Pass or Fail |
| Not Applicable | IR1 | Ancillary equipment | Information Requirement Only |
|  | | | | | |
| Commercial - Total Cost of Ownership (TCO) | 60% | 45.0% | Capital cost for equipment, including chassis, control plane and transport plane modules, software and software feature licences. These costs will be derived from the Bidders response to the equipment requirements described as the forthcoming PoP locations set out in in Annex 2 | | |
| 25.0% | Recurrent costs for support and maintenance of equipment at all UbuntuNet service locations. | | |
| 15.0% | Costs for delivery of goods both on initial deployment and spare replacement | | |
| Commercial - Contract | 15.0% | Software support and upgrade costs throughout the life of the equipment | | |
|  | PASS / FAIL | Framework Agreement - comments and mark up accepted during the dialogue phase for the submission of ITSOP responses but not at final ITSFB stage. THIS IS THE ITSOP STAGE | | |

Table 2.2 – Evaluation Criteria and Weightings

## Commercial Evaluation Criteria

* + - * 1. At the final stage, the Bidder with the lowest overall Price will be awarded the maximum available score. The remaining Bidders shall be awarded a percentage of the maximum available score relative to the best price.

Example - Bidder A submits the lowest overall pricing of €250,000. Bidder A is awarded the maximum available score – 100%. Bidder B submits pricing for the same services of €500,000. As the price is twice as expensive as Bidder A’s price, Bidder B is awarded 50% of the maximum available score.

* + - * 1. Pricing scores will take account of all relevant elements. Bidders should note that the UbuntuNet Alliance infrastructure is used entirely for non-commercial purposes by its member NRENs, end user communities behind them and any EC funded demonstration projects.

## Evaluation of Technical Quality of the Outline Solutions, Implementation Criteria & Future Proofing

* + - * 1. The Alliance will establish an evaluation panel that will use its collective professional judgement to evaluate responses in accordance with the evaluation criteria, weighted and (sub-weighted) as shown in Table 2.2 above.
        2. UbuntuNet Alliance reserves the right to reject offers that do not meet its minimum standards, where stated.
        3. UbuntuNet Alliance reserves the right to consider answers to one question where they may support the evaluation of another question.
        4. The Alliance will award scores for those questions related to Quality Evaluation Criteria and non-price commercial questions reflecting reasoned professional judgement as to the merits of each answer.
        5. Answers to each question will be given a mark out of 5 (0 being the lowest and 5 being the highest). The mark will then be multiplied by the weighting to give a percentage for each question.
        6. Marks will be awarded in accordance with the allocations shown below. Where specific characteristics are expected in order to secure a certain score, these will be set out in the ITSOP. However, the response should not necessarily be limited to these characteristics.
        7. **You must respond to all stated requirements** - a non-response to a stated requirement can only score zero marks.
        8. Comments will be recorded alongside the score for each question to highlight key points about the response that will justify the score allocated.

## Contractual Clauses

* + - * 1. The Framework Agreement document contains the terms and conditions that will govern both the framework and individual call off contracts. Call Off contracts awarded under the Framework will be used for contracting with the winning Bidder once the Framework Agreement has been awarded and signed.
        2. Bidders are required to complete the template in front of the Framework Agreement only where they deem absolutely necessary, submit a mark-up of the contractual documentation in accordance with the instructions in this section.
        3. The Framework Agreement and Call Off Terms and Conditions are also being published here and have been used (and accepted by the market) in this format in a number of tender procedures by the Alliance in the last 5 years.
        4. As stated in para 40 above, Bidders should provide a light touch review of the contract terms and conditions so that we can arrive at an agreement agreeable to all parties that meets the Alliance’s requirements and protects its investment.
        5. Contractual elements are NOT scored. They are pass or fail in nature and so Bidders are required (at the final stage) to confirm acceptance of the terms in order to ensure a level playing field between all tender responses. This is via the table in the Framework Agreement Clauses document. So this, dialogue stage is the only opportunity to discuss the contract terms and ensure clarity before final bids are invited.
        6. Again, it is relevant to state that the terms and conditions set out in the above referenced document are not majorly different to those that contracts that Providers are trading on where they are already providing supplies and services to the UbuntuNet Alliance. Our obligation is, as always, to treat the market fairly and not to undermine our existing contractual relationships.
        7. During the dialogue phase, Bidders must read the contract text during their response to the ITSOP and provide a marked up version of the Framework Agreement (FA) as part of their response to the ITSOP. This is so that any issues associated with the terms and conditions of the FA can be discussed and resolved / reworded during the dialogue phase.

## Deadline for Submissions

* + - * 1. Bidders are required to submit their initial responses to the draft requirements set out in the ITSOP to [procurement@ubuntunet.net](mailto:procurement@ubuntunet.net) by the 4th of September, 2023

# Context to the Requirements and the Network as it is today

* + - * 1. The Alliance’s requirement is for the supply, delivery, installation, commissioning and ongoing support of packet layer routing and switching equipment (including spares and components) for the ongoing operation of UbuntuNet PoPs in the various Eastern and Southern African countries (as well as equipment to support the interconnects required in London and Amsterdam), to serve as connection points for beneficiary NRENs.
        2. The UbuntuNet Alliance currently has a network predicated upon Juniper equipment as set out within Annex 2. Bidders must respond to this ITSOP with a supply and support proposition that can support the extant estate but are free to also consider and suggest alternate platforms (but with similar capability) during the life of the framework agreement. To this end Bidders are free to provide pricing for equipment from other vendors in addition to Juniper in order to ensure that such offers can be formally captured in the contractual documents should the Alliance be in a position where a transition or dual technology platform becomes a reality.
        3. The UbuntuNet Alliance reserves the right to choose equipment from a specific OEM at any time and will place orders for equipment and / or services in accordance with the relevant Ordering Procedures schedule as set out in the Framework Agreement.
        4. Figure 3.1 sets out a schematic network topology representing the UbuntuNet Alliance network and specifies the type of Juniper platform currently installed at each PoP. The modules installed in each router today can be found in the asset register included in Annex B.

A picture containing map, diagram, atlas, text

Description automatically generated

**Figure 3.1 - Network layout**

* + - * 1. The number and type of interfaces required for each existing (or new chassis) unit will be defined at point of order under specific call off contracts.
        2. Annex 2 sets out the extant network assets giving a view of the network as it is today.

|  |  |
| --- | --- |
| **Q1 - Supply Chain** | **Award Criteria: Services - Delivery and Supply Chain** |
| **Requirement – UbuntuNet Alliance require a robust, reliable and efficient supply chain** | |
| Bidders should be able to describe the supply chain that will be used to ensure timely delivery of products to the locations set out in Annex 1, as well as other locations across south and east Africa  You are required to describe your organisation’s infrastructure and approach in respect of delivering packet layer Equipment of the type required for the Alliance’s network. You should include specific arrangements where they exist, or a clear plan for new countries if you do not already deliver and support equipment there.  This must be described for each of the Locations detailed in Annex 1, below, including Europe.  The most complete and detailed responses to the aspects that collectively comprise the requirement (as set out below), will be scored higher. Complete responses (including all the specific areas of information set out above that collectively will help evidence that the requirement can be fully met), should address all the aspects defined below in order to achieve maximum marks - the description that you submit in response to the above stated requirement will be assessed on how well it addresses the following aspects. If you do not address the elements below comprehensively, you can expect to score less than full marks  Response Guidance   * you should indicate if this function is to be carried out with your own infrastructure and resources or outsourced to a 3rd party (providing location and resource details for each of the UbuntuNet Alliance countries please); * you should clearly indicate the parties involved and the relationships between them. Where such delivery is to be outsourced to a third party, you must explain all elements of the supply and logistics chain providing evidence for the existence of pre-existing contractual relationships with such 3rd party providers; * you should describe any pre-existing, consistent, stable and proven delivery methods in each of UbuntuNet Alliance countries – or tell us how you intend to establish the same for countries where you have no presence at this time.   Using the rationale given in Table 2.1, a lower score will be given if it is not clear from your response if your solution properly addresses the various aspects for assessment.  Please enter your response in the box below [Max 4 sides of A4]. | |
| Bidder Response (max 1500 words) | |

|  |  |
| --- | --- |
| **Q2 - Delivery Plan for spares or new equipment** | **Award Criteria: Services - Delivery and Supply Chain** |
| **Requirement – UbuntuNet Alliance requires a comprehensive description of the Bidder’s approach to delivering new equipment or spares** | |
| Bidders should include, within their response, a detailed project plan, which identifies all the activities required to meet the requirements for new build as well as supporting spares replacement.  The most complete and detailed responses to the aspects that collectively comprise the requirement (as set out below) will be scored higher. If you do not address the elements below comprehensively, you can expect to score less than full marks;  Response Guidance:   * you should include a comprehensive project planning template (covering the aspects such as lead time, transit, customs clearances etc) that would be applied to all Orders under this Agreement, with a description of the project team structure where implementation is required as well as an indicative deployment plan, with associated timescales * the Quality management approach to be implemented during any implementation projects – you should describe how installation quality control and rectification procedures are built into day to day operations; * a description of any third-party contractor arrangements (if applicable) including level of day to day deployment management control you have over any third-party contractors * information about any proposed installation spares holding for use by implementation teams during the initial deployment phase * how you handle DOA hardware during the deployment phase in order to reduce delays in acceptance. Bidder should identify if commissioning spares are carried and in what quantities - a good response will clearly evidence how any DoA hardware events will not impact the rollout timings for a specific site   Using the rationale given in Table 2.1, a lower score will be given if it is not clear from your response if the requirement, (including all the specific areas of information set out above that collectively will help evidence that the requirement can be fully met) and/or when it is not clear if your solution properly addresses the various aspects for assessment.  Please enter your response in the box below [Max 4 sides of A4]. | |
| Bidder Response (max 300 words plus template plan) | |

## 

## Installation and Commissioning

* + - * 1. This section refers to the future installation and commissioning of equipment in an agreed location in any one of UbuntuNet Alliance Service Locations.

| **Formal Compliance Statement**  **INSTALLATON & COMMISSIONING – Assumptions, Dependencies and Mandatory Requirements** | **Bidder Acceptance (Yes / No)** |
| --- | --- |
| Prior to the installation and commissioning roll-out, UbuntuNet Alliance’s role is that of providing local storage for the equipment, instructions on arrangement of equipment in cabinets and room, cabling instructions and conventions to follow during the roll-out of installation and commissioning |  |
| During the installation and commissioning roll-out, UbuntuNet Alliance’s role is limited to that of liaising with the installation location remote hands so that   * Access is granted for Bidder personnel to the installation location * Previously delivered equipment is made available to Bidder |  |
| Bidder will provide biweekly written updates to UbuntuNet Alliance with accurate installation and commissioning activities progress and timelines (email) |  |
| In the pricing table in ANNEX 3, for the proposed **new** PoPs, the Bidder must confirm that the charges include; |  |
| 1. All applicable charges for installation and commissioning per location (note that a coefficient for indexing for such services in the future should be reflected in the response). |  |
| 1. Site survey – a list of all sites and their addresses can be found in Section in ANNEX 1, UBUNTUNET ALLIANCE POINTS OF PRESENCE |  |
| 1. Installation of the equipment in an industry standard rack |  |
| 1. within pre-existing industry standard PoP facilities |  |
| 1. Provision and installation of the required optical and electrical links connections and wiring according to an agreed plan |  |
| 1. Connection of the equipment to the appropriate network links and connections provided on site |  |
| 1. Labelling of equipment and links according to an agreed plan |  |
| 1. Any installation related requirements such as provision of tools, cabling, labels, remote connectivity and required ancillary materials for the activities requested in this section are responsibility of Bidder |  |
| 1. Compilation of an inventory of assets (including serial numbers and asset tagging) for each location and allocation of asset identities as per the example asset management standard in ANNEX 5 |  |
| 1. Activation and commissioning, testing of the equipment according to an agreed set of tests with UbuntuNet Alliance. This outcome of this will determine that each of the constituent components of the network element are in working condition individually and in conjunction with other components in the same network element and that the network element is a fully functional node. A set of standard tests that will be followed has been provided in ANNEX 2 of this ITSOP. |  |
| 1. Initiating, following and completing RMA process with vendor in the case of faulty equipment. |  |
| 1. Producing and providing a handover package documenting the activities carried out and the list of items in this section |  |
| 1. Removal of the packaging material |  |
| 1. Provision of competent staff, skilled and experienced in the subject areas and other matters which relate to the services they are to provide |  |
|  |
| 1. Equipment installation and commission according to an agreed schedule with UbuntuNet Alliance, to be completed within 6 months from the first written commitment for Phase I |  |
|  |
| 1. Equipment installation and commission of subsequent orders within 40 working days from the receipt of an order |  |
|  |
| 1. If the equipment comes with its own rack, installation of vendor’s own rack and equipment |  |
|  |

|  |  |
| --- | --- |
| **Q3 - Installation and Commissioning Approach** | **Award Criteria: Services - Professional Services** |
| **Requirement – UbuntuNet Alliance requires a comprehensive description of the Bidder’s approach to implementing new network equipment.** | |
| Bidders should include, in order to fully meet the stated requirement, details of the installation and commissioning of the required equipment, indicating the resources (including all 3rd parties) available to individual work projects and how said resources are programme managed from within your organisation.  The most complete and detailed responses to the aspects that collectively comprise the requirement (as set out below) will be scored higher. Complete responses (including all the specific areas of information set out above that collectively will help evidence that the requirement can be fully met) will be assessed on how well it addresses the following aspects.  An optimal response to this question is one that illustrates the sequence and relationship of events from the moment goods are in the service location to completion of work, the ability to identify risks and manage them.  If you do not address all the elements below comprehensively, you can expect to score less than full marks;  Response Guidance:   * you should include details about whether or not installation and commissioning activities will be outsourced to a third-party subcontractor or carried out using the Bidder's’ own resources – a good response will, for projects specific to the countries concerning the UbuntuNet Alliance, include information about the parties (including subcontractor relationships) that will be involved in this exercise and their relationship with your organisation; * you should set out your organisation’s approach installation spares holding for use by implementation teams during the initial deployment phase – a good response will address how you handle DOA hardware during the deployment phase in order to reduce or minimise delays in acceptance; * state the waste management procedures to be applied during the equipment installation phase to ensure all sites are left clean and tidy; * details on how the bidder will minimize the number of site visits required to complete the on-site implementation activities (e.g. surveys, implementation, QA and handover activities). * details of any verification testing for each node deployment – a good response will clearly describe how you ensure the node is correctly deployed in accordance with agreed HLD and LLD. State how you ensure the node is ready-for-service – please include verification of node health – control plane, fabric, line cards, and power supplies, etc. as applicable;   Using the rationale given in Table 2.1, a lower score will be given if it is not clear from your response if your solution properly addresses the various aspects for assessment.  Please enter your response in the box below [Max 4 sides of A4]. | |
| Bidder Response | |

#### 

## Support Services

* + - * 1. This section refers to support services, including day-to-day provision of spare parts and resolution of problems and issues related to all equipment. The purpose of this section is to form a clear picture of the proposed support structure, including the groups involved in the service requests, how these groups interact to solve a support problem, and how service requests are transferred or escalated within the organization’s support structure.

| **Formal Compliance Statement**  SUPPORT SERVICES – Assumptions, Dependencies and Mandatory Requirements  **The stated requirements below need the Bidder’s confirmation and are a straightforward Pass / Fail criterion - note that a stated Fail will cause your entire bid to be rejected** | **Bidder Acceptance (Yes / No)** |
| --- | --- |
| Post implementation, UbuntuNet Alliance will take active responsibility for the support and maintenance role, taking ownership items below and making them available to Bidder   * **MANDATORY - access to equipment vendor software repository for periodic upgrade of software. Vendor will be expected to liaise with equipment manufacturer to provide the initial login credentials to the UbuntuNet Alliance** * Gather fault information and background * Gather technical details of affected equipment (i.e. serial/part numbers, location, support contract details, local contacts, support files, etc.) * Assessment of fault impact * Initial fault symptoms * Initial fault isolation * Initial fault identification * Initial fault troubleshooting * Initial attempt to problem resolution or workaround * Access to equipment vendor knowledge base and self-support tool to identify and solve known problems * Monitoring and alerting faults and performance degradation * Liaising and ensuring availability of local remote hands with basic capability |  |
| UbuntuNet Alliance is able to delegate any other support maintenance tasks to Bidder in confidence that Bidder takes ownership of problem up to resolution, escalating accordingly either internally or with vendor. |  |
| UbuntuNet Alliance is able to operate a trusted partner model with Bidder for support and maintenance. Bidder accepts support and maintenance tasks done by UbuntuNet Alliance when a support request is raised and confirms that steps already taken by UbuntuNet Alliance are not systematically replicated by the Bidder |  |
| Bidder will able to work along with UbuntuNet Alliance in problem identification and resolution in problems where Bidder equipment is involved but may not be the cause. Note that this applies to interoperability with any 3rd party vendor equipment other than that supplied by the Bidder. |  |
| In the pricing spread-sheet Annex 3, the Bidder must confirm that the charges include; |  |
| 1. a breakout of applicable charges for support services per device and location. |  |
| 1. Charges for a 4 year support period, payable yearly |  |
| 1. 24x7 unlimited access to a single-point of contact support centre by phone and online |  |
| 1. Efficient issue tracking system which enables management of tasks, RMA (Return Material Authorization) requests and problems related to the equipment operation and use |  |
| 1. Access to team of engineers with extensive experience supporting large scale networks |  |
| 1. Assured escalation alerts to senior management staff triggered on all priority issues |  |
| 1. Assured functional escalation of problem resolution up to equipment vendor |  |
| 1. Access to all new software releases when made available |  |
| 1. Self-service access to online portal offering information, answers, tools, and service options required to ensure support to the network, including (but not limited to) software downloads, technical alerts and bulletins, and Knowledge Base |  |
| 1. Confirmation that submitted pricing includes the Bidder taking responsibility for the logistics and costs of transportation for replacement units (and retrieval of defective ones) to the site of installation. In Incoterms, DDP |  |
| 1. Confirmation that submitted pricing includes the Bidder taking responsibility for replacement of faulty hardware onsite |  |
| 1. Confirmation that submitted pricing includes the Bidder taking responsibility for ensuring that the replaced hardware is functional for service |  |

|  |  |
| --- | --- |
| **Q4 – Hardware Support, Spares Inventory, and First Line Maintenance** | **Award Criteria: Services - Support and Maintenance** |
| **UbuntuNet Alliance requires a comprehensive support model in respect of any installed, operational packet layer equipment and software.** | |
| A good response to the requirement above will include complete and detailed responses to all the aspects set out below, and can include support ***models that use pre-owned or refurbished equipment****,* avoiding the need to pay for periods when equipment has not been under support in the past, will be scored higher.  An optimal response evidences the ability to assure a hardware replacement within the requested Service Level, providing clear information about how spares are handled by the Bidder in each of the service locations. An in-country depot, or process offering a similar response time, as close as possible to the service location will attract higher marks over a sparing arrangement requiring long processing times and customs clearances. If you do not address the elements below comprehensively, you can expect to score less than full marks. Your response to the requirement should include:   * a description of how your proposed spares holding and logistics process enables you to meet the Service Level Targets in each of the locations. Responses should include an explanation of the workflow between the Alliance, your TAC, and any other third parties (sub-contractors) as applicable etc – models that include on site spares in readiness are acceptable; * set out the typical timescales required to on-board, train new partners and to set up new Spares Holding and in general how stock holdings are populated, to ensure you can support our requirements, i.e. based on our hardware deployment, a good response should include details and maps showing the locations (city/country) of your stock holdings and FLM engineer locations; * describe if and how firmware can remain current for held stock; * a statement detailing how it is expected that failed components are returned to the Bidder from all locations listed in the locations in Annex 1. * an explanation of how the Alliance NOC will be able interact with your FLM team on a day to day basis or in the case of a specific incident. * explain how you would handle an issue whereby the replacement part is clearly going to exceed the SLA for arrival and replacement time. * tell us about the known risks related to inter-country delivery, i.e. transport, couriers, custom and tax clearance and how you manage such so as to ensure their mitigation; * details of how the Bidder would achieve a 24X7X4HR replacement for failed routing equipment and 8X5XNBD for Power Distribution Units and Ancillary Equipment, including the locations of any relevant depots; * details of your access to OEM vendors’ knowledge bases and self-support tools to identify and address vendor notices, good practices, recommendations, as well as configuration management of the equipment, its software, and all related software upgrades   Using the rationale given in Table 2.1, a lower score will be given if it is not clear from your response if your solution properly addresses the various aspects for assessment.  Please enter your response in the box below | |
| Click here to enter text. | |

| **Q5 -** **Support Processes – Operational Support** | **Award Criteria: Services - Support and Maintenance** |
| --- | --- |
| **UbuntuNet Alliance requires software support throughout the life of the packet layer equipment, for both existing and new installations in the future** | |
| Bidders should describe how they will be delivering focused operational and software support for the Alliance’s production network environment.  A good response to the requirement above will include complete and detailed responses to the aspects that collectively comprise the requirement (as set out below). Responses that properly address all the elements below will be scored higher. Complete responses should address all the aspects defined below in order to achieve maximum marks - the description that you submit in response to the above stated requirement will be assessed on how well it addresses the following aspects.  If you do not address the elements below comprehensively, you can expect to score less than full marks. Your response to the requirement should include:   * a description of the fault resolution and handling process where equipment, other than the Bidders, is involved in an event requiring investigation * the availability and capability of the Focussed Technical Support (or equivalent) engineers that may be used by UbuntuNet engineers – you should include options in the pricing table that include a “pay as you go” model as well as a subscription model; * support and maintenance structures, including the escalation path for problem resolution; * provide detailed information on how a support request would be handled in each of the cases below; for each case, Bidders should specify the parties or groups involved within their support structure, the interaction between them, and them with UbuntuNet Alliance, as well as the Bidder’s expectation of roles and responsibilities for each party / group, in each of the following scenarios:   + Hardware fault, diagnosis and replacement   + Software fault, known bug   + Software fault, unknown/new bug * provide the physical location of the TAC, its operational hours for each tier (manned hours vs on call hours), incident logging procedures, and work flow between tiers; * Working procedures with the OEM TAC (you must specify what level of TAC your NOC have access to) and how working between your TAC, UbuntuNet Alliance and the OEM TAC / Software engineering will be achieved if taken up as an option   Using the rationale given in Table 2.1, a lower score will be given if it is not clear from your response if your solution properly addresses the various aspects for assessment.  Please enter your response in the box below | |
| Bidder Response: | |

## Support and Maintenance

* + - * 1. When considering how best to support the R&E sector as part of responding to this tender, please look at models that don’t assume price increases through time.  It is largely accepted the cost to support a network is not a linear cost model. A chassis with 100Gb capacity in 3 directions, does not double in the need for support when the bandwidth is doubled.  Suppliers don’t need to build a 2nd warehouse to support such incremental increases.  Support is not a linear function.  In the optical and mobile equipment world, support costs typically run at between 6 and 10% of the installed base cost.  In the packet layer market this cost is artificially set at a much higher level. This is unaffordable to the research and education sector particularly when coupled with large OEMs seeking year on year revenue increases.
        2. Channel partner innovation in terms of using 2nd life equipment for spares support can offer a different type of support model that not only prolongs the life of the initial UbuntuNet Alliance investment but also makes a significant contribution to the sustainability objectives of the research sector.
        3. The packet layer OEMs choose to use the channel partner model, seemingly divesting themselves of responsibility for direct customer support.  So it is for the chosen channel partner to find innovation in supporting our sector and help research and education networking thrive into the next decade and beyond.
        4. Ideally, the Alliance anticipates a single level of service in respect of spares support in that a level of sparing support that has the effect of replicating a “Same Day’ service is our target. Same Day is defined as spares delivered and fitted within 7.5 hours of formal confirmation from TAC that the part is faulty (or suspected faulty), and needs to be replaced. The geographic constraints facing the Bidder and the Alliance in south and east African region mean that North American or European service models do not apply so Bidders bringing innovative thinking that supports the Alliance’s objectives will score favourably.
        5. Bidders are required to confirm their commitment to the stated Key Performance Metrics in the table below. The first table (below) sets out a clear common understanding of what constitutes an incident classification and the table in Q6 sets out the actual SLA requirements that then reference the incident classifications shown in the table below.

| **Incident / Issue / Problem Classification** | **Definition/Description** |
| --- | --- |
| Critical/P1 | Incidents that cause loss of service or continuous instability of mission-critical functionality and have no workaround.  Inability to use a feature or functionality that is currently relied upon for mission-critical functionality; for example, extended loss of management.  Intermittent issues that affect mission-critical functionality. |
| Major/P2 | Incidents that are service affecting, but not causing loss of service or loss of mission-critical functionality. Loss of redundancy of critical components. |
| Minor/P3 | Incidents that are not impairing /interrupting the service or any mission-critical functionality.  Time-sensitive questions or information requests.  Information and RFO requests.  Standard questions on configuration or functionality of equipment.  Non-urgent RMA requests.  Cosmetic defects. |

| **Q6 – SLA Requirements** | | **Award Criteria: Services - Support and Maintenance** | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **UbuntuNet Alliance requires a committed SLA with its network support partner that aligns with the targets and service credit regime set out below.** | | | | | | |
| ***Parameter*** | ***Ideal Minimum Service Level Target Required*** | | ***Offered Service Level Target*** | ***Minimum Ideal Value or Service Credit required*** | ***Service Credit Offered*** | ***Sub Weighting*** |
| Critical/P1 Initial Response time (could be ticket creation/auto response etc) | 15 minutes from notification by the Customer | |  | 10% of the monthly equivalent total support charges of the affected node (total support charge calculation to include chassis plus all CI’s that were part of the node at the time of the fault) |  | 10 |
| Critical/P1 Start of diagnosis time (time taken to engage technically with Customer regarding issue) | 30 minutes from Initial Response time | |  | 10% of the monthly equivalent total support charges of the affected node (total support charge calculation to include chassis plus all CI’s that were part of the node at the time of the fault) |  | 10 |
| Critical/P1 Subsequent update time (maximum time interval between updates during ongoing case) | 60 minutes from last response | |  | 10% of the monthly equivalent total support charges of the affected node (total support charge calculation to include chassis plus all CI’s that were part of the node at the time of the fault) |  | 5 |
| Critical/P1 Resolution time | 7.5hr for same day hardware replace service - PoP sites. | |  | 10% of the monthly equivalent total support charges of the affected node (total support charge calculation to include chassis plus all CI’s that were part of the node at the time of the fault) |  | 5 |
| Major/P2 Initial Response time (could be ticket creation/auto response/acknowledgement etc) | 30 minutes from notification by the Customer | |  | 10% of the monthly equivalent total support charges of the affected node (total support charge calculation to include chassis plus all CI’s that were part of the node at the time of the fault) |  | 5 |
| Major/P2 Start of diagnosis time (time taken to engage technically with Customer regarding issue) | 60 minutes from Initial Response time | |  | 10% of the monthly equivalent total support charges of the affected node (total support charge calculation to include chassis plus all CI’s that were part of the node at the time of the fault) |  | 5 |
| Major/P2 Subsequent update time (maximum time interval between updates during ongoing case) | 4h from previous response | |  | 10% of the monthly equivalent total support charges of the affected node (total support charge calculation to include chassis plus all CI’s that were part of the node at the time of the fault). |  | 5 |
| Major/P2 Resolution time | 12 hours from beginning of initial for same day hardware replace service - PoP sites. | |  | 10% of the monthly equivalent total support charges of the affected node (total support charge calculation to include chassis plus all CI’s that were part of the node at the time of the fault). |  | 5 |
| Minor/P3 Initial Response time (could be ticket creation/autoresponse/acknowledgement etc) | 60 minutes from notification by the customer | |  | If Service level is breached a value of 1% of the monthly equivalent of total annual support charge shall be paid. Values shall be measured on a calendar month. |  | 3 |
| Minor/P3 Start of diagnosis time (time taken to engage technically with Customer regarding issue) | 12 hours from Initial Response time | |  | If Service level is breached a value of 1% of the monthly equivalent of total annual support charge shall be paid. Values shall be measured on a calendar month. |  | 3 |
| Minor/P3 Subsequent update time (maximum time interval between updates during ongoing case) | 24 hours from previous response | |  | If Service level is breached a value of 1% of the monthly equivalent of total annual support charge shall be paid. Values shall be measured on a calendar month. |  | 3 |
| Minor/P3 Resolution time | 7 days | |  | If Service level is breached a value of 1% of the monthly equivalent of total annual support charge shall be paid. Values shall be measured on a calendar month. |  | 3 |
| P1 / P2 Software bug fix lead time  (In the case of an incident where a workaround is implemented due to a bug fix being required to software/firmware) | Review of bug and provide estimate of software patch release within 7 days. Subsequent updates every 7 days. | |  | If Service level is breached a value of 1% of the total annual support charges shall be paid. Values shall be measured on a calendar month. |  | 5 |
| Resolution to software bug resolving a workaround to be made available to UA | Not later than 3 months | |  | If Service level is breached a value of 1% of the total annual support charges shall be paid. Values shall be measured on a calendar month. |  | 3 |
| Delay in **delivery** from agreed project timelines | No delay beyond the agreed project plan milestone for the delivery (including lead times and equipment delivery) as described in the relevant Call Off | |  | 0.5% of the total contract price of the delayed item of Equipment and the Connected Equipment per week payable for the period between the agreed and binding delivery date of the Connected Equipment as stated in the Outline Project Plan and the actual delivery date of the delayed item of Equipment, subject to a cap of 10% of the total contract price of the delayed item of Equipment and the Connected Equipment |  | 5 |
| Ordering lead time (UA installed) | 8 weeks | |  | 0.5% of the total contract price of the delayed item of Equipment and the Connected Equipment per week payable for the period between the agreed and binding delivery date of the Connected Equipment as stated in the Outline Project Plan and the actual delivery date of the delayed item of Equipment, subject to a cap of 10% of the total contract price of the delayed item of Equipment and the Connected Equipment. |  | 25 |

## Software

|  |  |
| --- | --- |
| **Q8 - Hardware Technical Specifications** | **Award Criteria : Technical Merit - Hardware** |
| **Requirement – UbuntuNet Alliance requires a redundant and flexible hardware solution which easily scales, requiring minimal effort and disruption to network operations.** | |
| Bidders should describe the features and attributes in respect of the proposed packet layer equipment that lend themselves to a robust and scalable IP layer network solution  A good response to the requirement above will include complete and detailed responses to the aspects that collectively comprise the requirement (as set out below). Complete responses should address all the aspects defined below in order to achieve maximum marks - the description that you submit in response to the above stated requirement will be assessed on how well it addresses the following aspects.  If you do not address the elements below comprehensively, you can expect to score less than full marks. Your response to the requirement should include:   * You should describe the separation between the control and forwarding planes * You should provide information in respect of the redundancy of hardware and software systems * You should provide details on the basic IP services that are supported by the equipment including routing protocols and routing & switching capacities * Please provide a summary of the management and maintenance capabilities that are native to the solution being proposed, e.g. support for upgrades in live systems * State if the proposed equipment supports Large (“jumbo”) Ethernet frames of at least 9216 bytes length * Information in respect of the upgradability to higher capacities * Details of the ability for components to be interchanged from similar platforms * API or alternative methods of configuration besides interactive Command Line Interface   Using the rationale given in Table 2.1, a lower score will be given if it is not clear from your response if your solution properly addresses the various aspects for assessment.  Please enter your response in the box below | |
| Bidder Response (max 1000 words) | |

## Provision and delivery of ancillary equipment

|  |  |  |
| --- | --- | --- |
| **Para #** | **Statement of Technical Requirement** | **Compliance Statement,** |
| **The stated requirements below need the Bidder’s confirmation and are a straightforward Pass / Fail criterion** | | Bidder confirmation (Yes / No) |
| **All equipment being proposed to meet this aspect of the Requirement must include the following features and functionality;** | | |
| Remotely managed power distribution units with the following specifications; | | |
|  | 100 to 250 VAC at 50 to 60 Hz. |  |
|  | Overload protection, |  |
|  | Rack mountable |  |
|  | Configuration, control and monitoring functions through web interface and or command line interface. |  |
|  | Manual or scheduled power reboots functionality. |  |
|  | Current, voltage, and frequency monitoring and reporting. |  |
|  | Metering function |  |
|  | Alert notifications via email, syslog, SNMP |  |
|  | Access control using username/password, IP address filtering |  |
| Rack cabinets with following specifications; | | |
|  | Internal standard 19 inch wide racks |  |
|  | be 42 U in height, |  |
|  | be fully perforated to maximize air flow, |  |
|  | have an internal depth of at least 1000 mm |  |

|  |  |
| --- | --- |
| **Q9 - Provision of Ancillary Equipment** | **Information Only** |
| **Requirement - UbuntuNet Alliance will require a range of additional ancillary equipment as part of the build for an Alliance PoP, during the life of the Framework Agreement** | |
| Bidders should describe the range of ancillary equipment that can be supplied and supported as part of a typical packet layer PoP build  UbuntuNet Alliance wishes to understand the Bidders’ ability to reliably provide ancillary equipment in all potential PoP locations – new and existing. Bidders should describe their supply chain partners and logistical support in the context of the following types of ancillary equipment typically associated with a PoP build. Information about the following (but not limited to) types of equipment should be provided:   * Optical Distribution Frames * Fibre and copper patch leads * OOB equipment * Racking * PDUs   Using the rationale given in Table 2.1, a lower score will be given if it is not clear from your response if your solution properly addresses the various aspects for assessment.  Please enter your response in the box below | |
| Bidder Response (max 1000 words) | |

# ANNEX 1 UBUNTUNET ALLIANCE POINTS OF PRESENCE

The following table provides all UbuntuNet Alliance PoP locations at which connectivity already terminates and where data equipment is already housed or likely to be housed in the next 12 months.

| **Location** | **Address** | **Coordinates** |
| --- | --- | --- |
| Nairobi | East Africa Data Centre (EADC), Sameer Park, Mombasa Road, Nairobi, Kenya | -1.3282, 36.8665 |
| Dar es Salaam | Plot no. 49, Silver Sands Hotel, Kunduchi Beach, Dar Es Salaam, Tanzania | -6.6559, 39.2127 |
| Maputo | Avenidada Marginal, Maputo, Mozambique | -25.9348, 32.6279 |
| Kampala | National Information Technology Authority – Uganda (NITA-U), Statistics House, Plot 9 Colville Street, Kampala, Uganda | 0.31600, 32.584749 |
| Kigali | Telecom House, Boulevard de L'Umuganda, Kacyiru, Kigali, Rwanda | -1.944641, 30.089512 |
| Mtunzini | SEACOM CLS POP - Mtunzini Cable Station, Old railway station in Mtunzini, South Africa | -28.9598, 31.7586 |
| Cape Town | Internet Solutions, 34 Bree Street, Cape Town | -33.9184, 18.4206 |
| Lusaka | University of Zambia, Great East Road Campus, School of Education Building, 1st Floor, West Wing, Lusaka, Zambia | --15.39046643439472, 28.32749943511211 |
| Blantyre | Malawi Liverpool Welcome Trust Learning and Training Centre, University of Malawi, College of Medicine, Blantyre, Malawi. | -15.804826,35.021947 |
| Harare | Colocation room , 3rd floor TelOne Harare Main Exchange Building, Corner of Sam Nujoma street & Samora Machel Avenue, Harare. | -17.8259465437188, 31.05071243641013 |
| London | Suit 2J8, Telecity, 8/9 Harbour Exchange Square, London E14 |  |
| Amsterdam | Nikhef, Room H140 Science Park 105, 1098 XG, Amsterdam, Netherlands Coordinates:  52.356276, 4.951293 |  |
| Bujumbura | Vietel Burundi Data Centre, Bujumbura  Number 51 Boulevard de l'Uprona, Quartier Rohero II, Commune Rohero Bujumbura Marie Burundi | -3.380365, 29.371530 |
| Moanda | SCPT station moanda  Av du commerce 419  Muanda, Kongo central  Republique Democratique du Congo |  |
| Gaborone | BofiNET data centre, 2nd Floor, Zambezi towers, 1st Commercial, Gaborone, Botswana | 24.653576, 25.903499 |
| Djibouti | To be provided |  |
| Johannesburg | OADC Isando, 16 Electron Ave, Isando, Kempton Park, 1600, South Africa | -26.13620375169428, 28.198897561337514 |
| Mombasa | SEACOM landing station Mombasa |  |

# ANNEX 2 UBUNTUNET ASSETS

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hardware inventory: Lusaka | | | | | | | | |
|  | Item | | | Version | Part number | Serial number | Description | Allocated to: |
| Chassis |  | | |  |  | JN123CADFAFB | MX480 |  |
|  | Midplane | | | REV 04 | 750-047862 | ACRC7902 | Enhanced MX480 Midplane |  |
|  | FPM Board | | | REV 02 | 710-017254 | CACW7846 | Front Panel Display |  |
|  | PEM 0 | | | Rev 10 | 740-029970 | QCS1324U0TS | PS 1.4-2.52kW; 90-264V AC in |  |
|  | PEM 1 | | | Rev 10 | 740-029970 | QCS1324U0MT | PS 1.4-2.52kW; 90-264V AC in |  |
|  | PEM 2 | | | Rev 10 | 740-029970 | QCS1702U0XH | PS 1.4-2.52kW; 90-264V AC in |  |
|  | PEM 3 | | | Rev 10 | 740-029970 | QCS1324U0S6 | PS 1.4-2.52kW; 90-264V AC in |  |
|  | Routing Engine 0 | | | REV 11 | 740-031116 | 9009138680 | RE-S-1800x4 |  |
|  | Routing Engine 1 | | | REV 09 | 740-031116 | 9009160331 | RE-S-1800x4 |  |
|  | CB0 | | | REV 15 | 710-021523 | CABW7544 | MX SCB |  |
|  | CB 1 | | | REV 15 | 710-021523 | CACL0794 | MX SCB |  |
| FPC 0 | | | | REV 16 | 750-038489 | CACV4175 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 06 | 711-038484 | CACP5260 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 18 | 750-031969 | CACH8499 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 0 | REV 01 | 740-016066 | PQS0X93 | SFP-IR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-016063 | PR80XSZ | SFP-IR |  |
|  |  |  | Xcvr 2 | REV 01 | 740-016066 | PQS6HP5 | SFP-IR |  |
|  |  |  | Xcvr 3 | REV 01 | 740-016066 | PQS6HNA | SFP-IR |  |
|  | MIC 1 |  |  | REV 30 | 750-028392 | CACP2775 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PRC41CQ | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PPM673K | SFP-LX10 |  |
|  |  |  | Xcvr 2 | REV 01 | 740-031850 | AC1617SA35S | SFP-LX10 |  |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PRC3E18 | SFP-LX10 |  |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PRC38UD | SFP-LX10 |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PRC3E4Z | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PRC3E4X | SFP-LX10 |  |
|  |  |  | Xcvr 4 | REV 01 | 740-031850 | PPM5PP2 | SFP-LX10 |  |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PRC3EA0 | SFP-LX10 |  |
| FPC 1 | | | | REV 06 | 750-063744 | CAHM4438 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 04 | 711-063749 | CAJB4211 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 31 | 750-028387 | CAHN5212 | 3D 4x 10GE XFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-014279 | SP1702163006 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-014279 | SP1702073012 | XFP-10G-LR |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-014279 | SP1702163005 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 37T685100357 | XFP-10G-LR |  |
|  | MIC 1 |  |  | REV 31 | 750-028387 | CAHN5294 | 3D 4x 10GE XFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-014279 | SP1702163004 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-014279 | SP1702163008 | XFP-10G-LR |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-014279 | SP1702073011 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-014279 | SP1702163003 | XFP-10G-LR |  |
| FPC 5 |  |  |  | REV 16 | 750-038489 | CACV4068 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 06 | 711-038484 | CACR7277 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 30 | 750-028392 | CACP2496 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPR3KKV | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | AC1617SA35Y | SFP-LX10 |  |
|  |  |  | Xcvr 2 | REV 01 | 740-031850 | AC1617SA35T | SFP-LX10 |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  | MIC 1 |  |  | REV 18 | 750-031969 | CACH8448 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  | Fan Tray | | |  |  |  | Enhanced Left Fan Tray |  |
| Chassis |  | | |  |  | CW0214020368 | EX2200-24T-4G |  |
| Routing Engine 0 | | | | REV 25 | 750-026468 | CW0214020368 | EX2200-24T-4G |  |
| FPC 0 | | | | REV 25 | 750-026468 | CW0214020368 | EX2200-24T-4G |  |
|  | CPU |  | |  | BUILTIN | BUILTIN | FPC CPU |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 24x 10/100/1000 Base-T |  |
|  |  | PIC 1 |  | REV 25 | 750-026468 | CW0214020368 | 4x GE SFP |  |
|  |  |  | Xcvr 0 | REV 01 | UNKNOWN | PTA131F | UNKNOWN |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PRC3E40 | SFP-LX10 |  |
| Power Supply 0 | | | |  |  |  | PS 100W AC |  |
| Fan Tray | | | |  |  |  | Fan Tray |  |

| Hardware inventory: Kigali | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Item | | | Version | Part number | Serial number | Description | Allocated to: |
| Chassis |  | | |  |  | JN122A2E7AFA | MX960 |  |
|  | Midplane | | | REV 04 | 750-047849 | ACRA6940 | Enhanced MX960 Backplane |  |
|  | FPM Board | | | REV 03 | 710-014974 | CABE4040 | Front Panel Display |  |
|  | PDM | | | Rev 03 | 740-013110 | QCS1716519S | Power Distribution Module |  |
|  | PEM 0 | | | Rev 10 | 740-027760 | QCS1723N0H0 | PS 4.1kW; 200-240V AC in |  |
|  | PEM 1 | | | Rev 10 | 740-027760 | QCS1723N0BK | PS 4.1kW; 200-240V AC in |  |
|  | PEM 2 | | | Rev 10 | 740-027760 | QCS1723N0FX | PS 4.1kW; 200-240V AC in |  |
|  | PEM 3 | | | Rev 10 | 740-027760 | QCS1723N0EW | PS 4.1kW; 200-240V AC in |  |
|  | Routing Engine 0 | | | REV 08 | 740-031116 | 9009148155 | RE-S-1800x4 |  |
|  | Routing Engine 1 | | | REV 08 | 740-031116 | 9013040897 | RE-S-1800x4 |  |
|  | CB0 | | | REV 15 | 710-021523 | CABP5949 | MX SCB |  |
|  | CB 1 | | | REV 15 | 710-021523 | CABS1643 | MX SCB |  |
|  | CB 2 | | | REV 15 | 710-021523 | CABP5922 | MX SCB |  |
| FPC 0 |  |  |  | REV 10 | 750-038489 | CABH2249 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABH8053 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 18 | 750-031969 | CABY5260 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 0 | REV 01 | 740-016066 | PQD3DCP | SFP-IR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-016066 | PQN0XGQ | SFP-IR |  |
|  |  |  | Xcvr 3 | REV 01 | 740-016063 | PR80XBC | SFP-IR |  |
|  | MIC 1 |  |  | REV 27 | 750-028392 | CABH9421 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPM5P81 | SFP-LX10 |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
| FPC 5 |  |  |  | REV 10 | 750-038489 | CABJ9249 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABL7462 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 18 | 750-031969 | CABW5961 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  | MIC 1 |  |  | REV 27 | 750-028392 | CABX9324 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPN08Z6 | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PPM673M | SFP-LX10 |  |
|  |  |  | Xcvr 2 | REV 01 | 740-031850 | PPM66SC | SFP-LX10 |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPM67JW | SFP-LX10 |  |
|  |  |  | Xcvr 2 | REV 01 | 740-031850 | PPM67A3 | SFP-LX10 |  |
|  |  |  | Xcvr 3 | REV 01 | 740-031850 | PPM6735 | SFP-LX10 |  |
|  | Fan Tray 0 | | | REV 08 | 740-031521 | ACDA1748 | Enhanced Fan Tray |  |
|  | Fan Tray 1 | | | REV 08 | 740-031521 | ACDA1743 | Enhanced Fan Tray |  |
| Chassis |  | | |  |  | CW0213268572 | EX2200-24T-4G |  |
| Routing Engine 0 | | | | REV 24 | 750-026468 | CW0213268572 | EX2200-24T-4G |  |
| FPC 0 | | | | REV 24 | 750-026468 | CW0213268572 | EX2200-24T-4G |  |
|  | CPU |  | |  | BUILTIN | BUILTIN | FPC CPU |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 24x 10/100/1000 Base-T |  |
|  |  | PIC 1 |  | REV 24 | 750-026468 | CW0213268572 | 4x GE SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPM6736 | SFP-LX10 |  |
| Power Supply 0 | | | |  |  |  | PS 100W AC |  |
| Fan Tray | | | |  |  |  | Fan Tray |  |

| Hardware inventory: Kampala | | | | | | | | |
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|  | Item | | | Version | Part number | Serial number | Description | Allocated to: |
| Chassis |  | | |  |  | JN1228750AFA | MX960 |  |
|  | Midplane | | | REV 04 | 750-047849 | ACRA6954 | Enhanced MX960 Backplane |  |
|  | FPM Board | | | REV 03 | 710-014974 | CAAZ3497 | Front Panel Display |  |
|  | PDM | | | Rev 03 | 740-013110 | QCS171651B4 | Power Distribution Module |  |
|  | PEM 0 | | | Rev 10 | 740-027760 | QCS1723N0CD | PS 4.1kW; 200-240V AC in |  |
|  | PEM 1 | | | Rev 10 | 740-027760 | QCS1723N0CJ | PS 4.1kW; 200-240V AC in |  |
|  | PEM 2 | | | Rev 10 | 740-027760 | QCS1723N0B7 | PS 4.1kW; 200-240V AC in |  |
|  | PEM 3 | | | Rev 10 | 740-027760 | QCS1723N0C9 | PS 4.1kW; 200-240V AC in |  |
|  | Routing Engine 0 | | | REV 08 | 740-031116 | 9009143137 | RE-S-1800x4 |  |
|  | Routing Engine 1 | | | REV 08 | 740-031116 | 9009144404 | RE-S-1800x4 |  |
|  | CB0 | | | REV 15 | 710-021523 | CABG2263 | MX SCB |  |
|  | CB 1 | | | REV 15 | 710-021523 | CABF3270 | MX SCB |  |
|  | CB 2 | | | REV 15 | 710-021523 | CABG2234 | MX SCB |  |
| FPC 0 |  |  |  | REV 10 | 750-038489 | CABG2463 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABK4718 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 18 | 750-031969 | CABW5980 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 0 | REV 01 | 740-016066 | PPK2LCQ | SFP-IR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-016066 | PPK2LCK | SFP-IR |  |
|  |  |  | Xcvr 2 | REV 01 | 740-016066 | PT92ST3 | SFP-IR |  |
|  |  |  | Xcvr 3 | REV 01 | 740-016066 | PQS6HNC | SFP-IR |  |
|  | MIC 1 |  |  | REV 27 | 750-028392 | CABH9515 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ0AUD | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PPM6703 | SFP-LX10 |  |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PQ63T79 | SFP-LX10 |  |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PQ6499R | SFP-LX10 |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PPM5PQM | SFP-LX10 |  |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PPM66HJ | SFP-LX10 |  |
| FPC 5 |  |  |  | REV 10 | 750-038489 | CABH2383 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABL7274 | MPCE PMB 2G |  |
|  | MIC 1 |  |  | REV 27 | 750-028392 | CABH9535 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PQ64874 | SFP-LX10 |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
| FPC 7 |  |  |  | REV 06 | 750-063744 | CAGN9531 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 04 | 711-063749 | CAGE1197 | MPCE PMB 2G |  |
| FPC 11 |  |  |  | REV 06 | 750-063744 | CAHG3396 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 04 | 711-063749 | CAHG5941 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 31 | 750-028387 | CAHG9812 | 3D 4x 10GE XFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 69T046200074 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 69T046200068 | XFP-10G-LR |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 69T046200091 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 61T046200068 | XFP-10G-LR |  |
|  | MIC 1 |  |  | REV 31 | 750-028387 | CAHC0876 | 3D 4x 10GE XFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 69T046200079 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 6XT046200012 | XFP-10G-LR |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 69T046200083 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 6XT046200079 | XFP-10G-LR |  |
|  | Fan Tray 0 | | | REV 08 | 740-031521 | ACDA1574 | Enhanced Fan Tray |  |
|  | Fan Tray 1 | | | REV 08 | 740-031521 | ACDA1584 | Enhanced Fan Tray |  |
| Chassis |  | | |  |  | CW0213470897 | EX2200-24T-4G |  |
| Routing Engine 0 | | | | REV 25 | 750-026468 | CW0213470897 | EX2200-24T-4G |  |
| FPC 0 | | | | REV 25 | 750-026468 | CW0213470897 | EX2200-24T-4G |  |
|  | CPU |  | |  | 750-026468 | BUILTIN | FPC CPU |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 24x 10/100/1000 Base-T |  |
|  |  | PIC 1 |  |  | BUILTIN | CW0213470897 | 4x GE SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PQ55H9A | SFP-LX10 |  |
| Power Supply 0 | | | |  |  |  | PS 100W AC |  |
| Fan Tray | | | |  |  |  | Fan Tray |  |

| Hardware inventory: Cape Town | | | | | | | | |
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|  | Item | | | Version | Part number | Serial number | Description | Allocated to: |
| Chassis |  | | |  |  | JN1228BFEAFA | MX960 |  |
|  | Midplane | | | REV 04 | 750-047849 | ACRA7309 | Enhanced MX960 Backplane |  |
|  | FPM Board | | | REV 03 | 710-014974 | CABB4805 | Front Panel Display |  |
|  | PDM | | | Rev 03 | 740-013110 | QCS171651AA | Power Distribution Module |  |
|  | PEM 0 | | | Rev 10 | 740-027760 | QCS1723N0CV | PS 4.1kW; 200-240V AC in |  |
|  | PEM 1 | | | Rev 10 | 740-027760 | QCS1723N0B6 | PS 4.1kW; 200-240V AC in |  |
|  | PEM 2 | | | Rev 10 | 740-027760 | QCS1723N0CY | PS 4.1kW; 200-240V AC in |  |
|  | PEM 3 | | | Rev 10 | 740-027760 | QCS1723N0CH | PS 4.1kW; 200-240V AC in |  |
|  | Routing Engine 0 | | | REV 08 | 740-031116 | 9009136933 | RE-S-1800x4 |  |
|  | Routing Engine 1 | | | REV 08 | 740-031116 | 9013042979 | RE-S-1800x4 |  |
|  | CB0 | | | REV 15 | 710-021523 | CABL5666 | MX SCB |  |
|  | CB 1 | | | REV 15 | 710-021523 | CABE9189 | MX SCB |  |
|  | CB 2 | | | REV 15 | 710-021523 | CABE9109 | MX SCB |  |
| FPC 0 |  |  |  | REV 10 | 750-038491 | CABW7255 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABJ7562 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 28 | 750-028387 | CABG3630 | 3D 4x 10GE XFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 33T694100068 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 |  | NON-JNPR | ZZBI0326 | XFP-10G-ER |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 36T685100158 | XFP-10G-LR |  |
|  | MIC 1 |  |  | REV 27 | 750-028392 | CABH9442 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ1WF1 | SFP-LX10 |  |
|  |  |  | Xcvr 3 | REV 01 | 740-031850 | PPM5P9L | SFP-LX10 |  |
|  |  |  | Xcvr 4 | REV 01 | 740-031850 | PPM67C8 | SFP-LX10 |  |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PPQ1VFM | SFP-LX10 |  |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PPM5PA0 | SFP-LX10 |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ1VJ2 | SFP-LX10 |  |
|  |  |  | Xcvr 3 | REV 01 | 740-031850 | PPP6E74 | SFP-LX10 |  |
|  |  |  | Xcvr 4 | REV 01 | 740-031850 | PPQ1WKN | SFP-LX10 |  |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PPQ2E9K | SFP-LX10 |  |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PPM4GHY | SFP-LX10 |  |
| FPC 1 |  |  |  | REV 18 | 750-038491 | CAED0098 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 06 | 711-038484 | CAEE7681 | MPCE PMB 2G |  |
| FPC 11 |  |  |  | REV 10 | 750-038491 | CABH6440 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABL1453 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 27 | 750-028392 | CABH9459 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ1UQ1 | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PPQ1V2F | SFP-LX10 |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ2EJY | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PPQ1WDY | SFP-LX10 |  |
|  | MIC 1 |  |  | REV 28 | 750-028387 | CABK4431 | 3D 4x 10GE XFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 33T694100022 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 33T694100028 | XFP-10G-LR |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  | Fan Tray 0 | | | REV 08 | 740-031521 | ACDA1128 | Enhanced Fan Tray |  |
|  | Fan Tray 1 | | | REV 08 | 740-031521 | ACDA1136 | Enhanced Fan Tray |  |
| Chassis |  | | |  |  | CW0213268658 | EX2200-24T-4G |  |
| Routing Engine 0 | | | |  | 750-026468 | CW0213268658 | EX2200-24T-4G |  |
| FPC 0 | | | | REV 24 | 750-026468 | CW0213268658 | EX2200-24T-4G |  |
|  | CPU |  | | REV 24 | BUILTIN | BUILTIN | FPC CPU |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 24x 10/100/1000 Base-T |  |
|  |  | PIC 1 |  |  | 750-026468 | CW0213268658 | 4x GE SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ1WDX | SFP-LX10 |  |
| Power Supply 0 | | |  |  |  |  | PS 100W AC |  |
| Fan Tray 1 | | | |  |  |  | Fan Tray |  |

| Hardware inventory: Mtunzini | | | | | | | | |
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|  | Item | | | Version | Part number | Serial number | Description | Allocated to: |
| Chassis |  | | |  |  | JN1228B75AFA | MX960 |  |
|  | Midplane | | | REV 04 | 750-047849 | ACRA7320 | Enhanced MX960 Backplane |  |
|  | FPM Board | | | REV 03 | 710-014974 | CABL4537 | Front Panel Display |  |
|  | PDM | | | Rev 03 | 740-013110 | QCS171651CS | Power Distribution Module |  |
|  | PEM 0 | | | Rev 07 | 740-029344 | QCS1719V0FF | DC 4.1kW Power Entry Module |  |
|  | PEM 1 | | | Rev 07 | 740-029344 | QCS1719V0JY | DC 4.1kW Power Entry Module |  |
|  | PEM 2 | | | Rev 07 | 740-029344 | QCS1719V0BV | DC 4.1kW Power Entry Module |  |
|  | PEM 3 | | | Rev 07 | 740-029344 | QCS1719V0L3 | DC 4.1kW Power Entry Module |  |
|  | Routing Engine 0 | | | REV 08 | 740-031116 | 9013114727 | RE-S-1800x4 |  |
|  | Routing Engine 1 | | | REV 08 | 740-031116 | 9009223181 | RE-S-1800x4 |  |
|  | CB0 | | | REV 15 | 710-021523 | CABE1347 | MX SCB |  |
|  | CB 1 | | | REV 10 | 710-021523 | CABW7568 | MX SCB |  |
|  | CB 2 | | | REV 04 | 750-047849 | CABF3302 | MX SCB |  |
| FPC 0 |  |  |  | REV 10 | 750-038489 | CABH2396 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABL7356 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 18 | 750-031969 | CABW5984 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 0 | REV 01 | 740-016066 | PPK2LAR | SFP-IR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-016066 | PPK2LBR | SFP-IR |  |
|  | MIC 1 |  |  | REV 27 | 750-028392 | CABH9443 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ1UQ0 | SFP-LX10 |  |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PPM673N | SFP-LX10 |  |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PPM5P7S | SFP-LX10 |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ1UPY | SFP-LX10 |  |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PQA6XH7 | SFP-LX10 |  |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PPM66HC | SFP-LX10 |  |
| FPC 5 |  |  |  | REV 10 | 750-038489 | CABH6140 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABG2069 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 18 | 750-031969 | CABW5949 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 0 | REV 01 | 740-016066 | PPK2LAQ | SFP-IR |  |
|  | MIC 1 |  |  | REV 27 | 750-028392 | CABK1129 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPM67B8 | SFP-LX10 |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
| FPC 10 |  |  |  | REV 25 | 750-038491 | CACB3335 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 08 | 711-038484 | CACC3585 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 33 | 750-028387 | CAKW9572 | 3D 4x 10GE XFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 36T685100111 | XFP-10G-LR |  |
| FPC 11 |  |  |  | REV 08 | 750-063744 | CAMB3443 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 04 | 711-063749 | CAMC7742 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 30 | 750-028387 | CACS5525 | 3D 4x 10GE XFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 43T046200084 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 43T046200128 | XFP-10G-LR |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 43T046200104 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 43T046200100 | XFP-10G-LR |  |
|  | MIC 1 |  |  | REV 28 | 750-028387 | CABG3682 | 3D 4x 10GE XFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 36T685100101 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 36T685100122 | XFP-10G-LR |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  | Fan Tray 0 | | | REV 08 | 740-031521 | ACDA1221 | Enhanced Fan Tray |  |
|  | Fan Tray 1 | | | REV 08 | 740-031521 | ACAD7531 | Enhanced Fan Tray |  |
| Chassis |  | | |  |  | HX0213213391 | EX2200-24T-DC-4G |  |
| Routing Engine 0 | | | | REV 06 | 750-037904 | HX0213213391 | EX2200 24-PORT DC |  |
| FPC 0 | | | | REV 06 | 750-037904 | HX0213213391 | EX2200 24-PORT DC |  |
|  | CPU |  | |  | BUILTIN | BUILTIN | FPC CPU |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 24x 10/100/1000 Base-T |  |
|  |  | PIC 1 |  | REV 06 | 750-037904 | HX0213213391 | 4x GE SFP |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PPQ1VZM | SFP-LX10 |  |
| Power Supply 0 | | | |  |  |  | PS 100W DC |  |
| Fan Tray | | | |  |  |  | Fan Tray |  |

| Hardware inventory: Maputo | | | | | | | | |
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|  | Item | | | Version | Part number | Serial number | Description | Allocated to: |
| Chassis |  | | |  |  | JN1227ABAAFA | MX960 |  |
|  | Midplane | | | REV 04 | 750-047849 | ACRA7321 | Enhanced MX960 Backplane |  |
|  | FPM Board | | | REV 03 | 710-014974 | CABL4538 | Front Panel Display |  |
|  | PDM | | | Rev 03 | 740-013110 | QCS171651AK | Power Distribution Module |  |
|  | PEM 0 | | | Rev 07 | 740-029344 | QCS1719V0NC | DC 4.1kW Power Entry Module |  |
|  | PEM 1 | | | Rev 07 | 740-029344 | QCS1719V04V | DC 4.1kW Power Entry Module |  |
|  | PEM 2 | | | Rev 07 | 740-029344 | QCS1719V0R8 | DC 4.1kW Power Entry Module |  |
|  | PEM 3 | | | Rev 07 | 740-029344 | QCS1719V0T6 | DC 4.1kW Power Entry Module |  |
|  | Routing Engine 0 | | | REV 08 | 740-031116 | 9013056083 | RE-S-1800x4 |  |
|  | Routing Engine 1 | | | REV 08 | 740-031116 | 9013042980 | RE-S-1800x4 |  |
|  | CB0 | | | REV 15 | 710-021523 | CABE9214 | MX SCB |  |
|  | CB 1 | | | REV 15 | 710-021523 | CABF3327 | MX SCB |  |
|  | CB 2 | | | REV 10 | 710-021523 | CABE9201 | MX SCB |  |
| FPC 0 |  |  |  | REV 10 | 750-038489 | CABH2348 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABH8219 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 18 | 750-031969 | CABW5982 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 0 | REV 01 | 740-016066 | PPK2LAP | SFP-IR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-016066 | PPK2LBH | SFP-IR |  |
|  | MIC 1 |  |  | REV 27 | 750-028392 | CABX9263 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ1EHD | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | AC1650SA5DV | SFP-LX10 |  |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PPM66H5 | SFP-LX10 |  |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PPM66HF | SFP-LX10 |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ0A1U | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PPM67C1 | SFP-LX10 |  |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PPM5PBK | SFP-LX10 |  |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PQA6UKZ | SFP-LX10 |  |
| FPC 5 |  |  |  | REV 10 | 750-038489 | CABH6021 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABH8143 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 18 | 750-031969 | CABY5254 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 0 | REV 01 | 740-016066 | PPK3E38 | SFP-IR |  |
|  | MIC 1 |  |  | REV 27 | 750-028392 | CABX9253 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | AC1650SA5DS | SFP-LX10 |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
| FPC 11 |  |  |  | REV 06 | 750-063744 | CAHG3567 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 04 | 711-063749 | CAHG6086 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 31 | 750-028387 | CAHF4175 | 3D 4x 10GE XFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 6YT046200029 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | UWG1P2C | XFP-10G-LR |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | UWJ0WAR | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | UWK15T0 | XFP-10G-LR |  |
|  | MIC 1 |  |  | REV 31 | 750-028387 | CAHF4102 | 3D 4x 10GE XFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | UWK0Q4A | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | UWJ26JF | XFP-10G-LR |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | UWG1P46 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | UWJ26EN | XFP-10G-LR |  |
|  | Fan Tray 0 | | | REV 08 | 740-031521 | ACDA1575 | Enhanced Fan Tray |  |
|  | Fan Tray 1 | | | REV 08 | 740-031521 | ACDA1585 | Enhanced Fan Tray |  |
| Chassis |  | | |  |  | HX0213213182 | EX2200-24T-DC-4G |  |
| Routing Engine 0 | | | | REV 06 | 750-037904 | HX0213213182 | EX2200 24-PORT DC |  |
| FPC 0 | | | | REV 06 | 750-037904 | HX0213213182 | EX2200 24-PORT DC |  |
|  | CPU |  | |  | BUILTIN | BUILTIN | FPC CPU |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 24x 10/100/1000 Base-T |  |
|  |  | PIC 1 |  | REV 06 | 750-037904 | HX0213213182 | 4x GE SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ0ATR | SFP-LX10 | Free |
| Power Supply 0 | | | |  |  |  | PS 100W DC |  |
| Fan Tray | | | |  |  |  | Fan Tray |  |

| Hardware inventory: Netherlands | | | | | | | | | |
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|  | Item | | | | Version | Part number | Serial number | Description | Allocated to: |
| Chassis |  | | | |  |  | JN11D5FC0AFA | MX960 |  |
|  | Midplane | | | | REV 03 | 710-013698 | ACAA3969 | MX960 Backplane |  |
|  | FPM Board | | | | REV 03 | 710-014974 | ZG2258 | Front Panel Display |  |
|  | PDM | | | | Rev 03 | 740-013110 | QCS1514501E | Power Distribution Module |  |
|  | PEM 0 | | | | Rev 07 | 740-027760 | QCS2051N092 | PS 4.1kW; 200-240V AC in |  |
|  | PEM 1 | | | | Rev 07 | 740-027760 | QCS1521N109 | PS 4.1kW; 200-240V AC in |  |
|  | PEM 2 | | | | Rev 07 | 740-027760 | QCS1521N0YU | PS 4.1kW; 200-240V AC in |  |
|  | PEM 3 | | | | Rev 07 | 740-027760 | QCS1446N04B | PS 4.1kW; 200-240V AC in |  |
|  | Routing Engine 0 | | | | REV 11 | 740-031116 | 9009081381 | RE-S-1800x4 |  |
|  | Routing Engine 1 | | | | REV 11 | 740-031116 | 9013120642 | RE-S-1800x4 |  |
|  | CB 0 | | | | REV 10 | 710-021523 | ZH1628 | MX SCB |  |
|  | CB 1 | | | | REV 10 | 710-021523 | ZF8940 | MX SCB |  |
|  | CB 2 | | | | REV 10 | 710-021523 | ZY9494 | MX SCB |  |
| FPC 0 |  | |  |  | REV 47 | 750-028467 | ABCR2561 | MPC 3D 16x 10GE |  |
|  |  | |  | CPU | REV 14 | 711-029089 | ABCV7157 | AMPC PMB |  |
|  |  | | PIC 0 |  |  | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |  |
|  |  | |  | Xcvr 0 | REV 01 | 740-031981 | UKQ09PK | SFP+-10G-LR |  |
|  |  | |  | Xcvr 1 | REV 01 | 740-031981 | UKQ0A9U | SFP+-10G-LR |  |
|  |  | |  | Xcvr 2 | REV 01 | 740-031981 | H342004168 | SFP+-10G-LR |  |
|  |  | |  | Xcvr 3 | REV 01 | 740-031981 | UKQ07LZ | SFP+-10G-LR |  |
|  |  | | PIC 1 |  |  | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |  |
|  |  | |  | Xcvr 0 | REV 01 | 740-031981 | UKP0E4F | SFP+-10G-LR |  |
|  |  | |  | Xcvr 1 | REV 01 | 740-031981 | UKP0E2V | SFP+-10G-LR |  |
|  |  | |  | Xcvr 2 | REV 01 | 740-031981 | H342004471 | SFP+-10G-LR |  |
|  |  | |  | Xcvr 3 | REV 01 | 740-031981 | UKQ07LM | SFP+-10G-LR |  |
|  |  | | PIC 2 |  |  | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |  |
|  |  | |  | Xcvr 2 | REV 01 | 740-031981 | UKQ09SJ | SFP+-10G-LR |  |
|  |  | |  | Xcvr 3 | REV 01 | 740-031981 | UKQ0A9C | SFP+-10G-LR |  |
|  |  | | PIC 3 |  |  | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |  |
|  |  | |  | Xcvr 0 | REV 01 | 740-031981 | H342004264 | SFP+-10G-LR |  |
|  |  | |  | Xcvr 1 | REV 01 | 740-031981 | H342004515 | SFP+-10G-LR |  |
|  |  | |  | Xcvr 2 | REV 01 | 740-031981 | H342004592 | SFP+-10G-LR |  |
|  |  | |  | Xcvr 3 | REV 01 | 740-031981 | H342004228 | SFP+-10G-LR |  |
| FPC 1 |  | |  |  | REV 08 | 750-038489 | CAAF6924 | MPCE Type 1 3D |  |
|  |  | |  | CPU | REV 04 | 711-038484 | CAAF6918 | MPCE PMB 2G |  |
|  | MIC 0 | |  |  | REV 15 | 750-031969 | CAAD5437 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | |  | Xcvr 0 | REV 01 | 740-016068 | PQA1E9W | SFP-SR |  |
|  | MIC 1 | |  |  | REV 27 | 750-028392 | CACD8164 | 3D 20x 1GE(LAN) SFP |  |
|  |  | | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  | |  | Xcvr 0 | REV 01 | 740-031850 | PQA5VRG | SFP-LX10 |  |
|  |  | |  | Xcvr 1 | REV 01 | 740-031850 | AC1650SA5DZ | SFP-LX10 |  |
|  |  | |  | Xcvr 2 | REV 01 | 740-031850 | AC1650SA5E0 | SFP-LX10 |  |
|  |  | |  | Xcvr 3 | REV 01 | 740-031850 | AC1650SA5E1 | SFP-LX10 |  |
|  |  | |  | Xcvr 4 | REV 01 | 740-031850 | AC1650SA5E2 | SFP-LX10 |  |
|  |  | | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
| FPC 7 |  | |  |  | REV 26 | 750-028467 | ABBK8192 | MPC 3D 16x 10GE |  |
|  |  | |  | CPU | REV 10 | 711-029089 | ABBL4436 | AMPC PMB |  |
|  |  | | PIC 0 |  |  | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |  |
|  |  | |  | Xcvr 0 | REV 01 | 740-031981 | H342004415 | SFP+-10G-LR |  |
|  |  | | PIC 1 |  |  | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |  |
|  |  | |  | Xcvr 0 | REV 01 | 740-031981 | H342004614 | SFP+-10G-LR |  |
|  |  | | PIC 2 |  |  | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |  |
|  |  | | PIC 3 |  |  | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |  |
| FPC 10 |  | |  |  | REV 10 | 750-038489 | CABJ9268 | MPCE Type 1 3D |  |
|  |  | |  | CPU | REV 04 | 711-038484 | CABL7347 | MPCE PMB 2G |  |
|  | MIC 0 | |  |  | REV 18 | 750-031969 | CABW5978 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | |  | Xcvr 0 | REV 01 | 740-016066 | PPK2LBQ | SFP-IR |  |
|  |  | |  | Xcvr 1 | REV 01 | 740-016065 | PPL5R47 | SFP-SR |  |
|  |  | |  | Xcvr 2 | REV 01 | 740-016065 | PLB6HQZ | SFP-SR |  |
|  |  | |  | Xcvr 3 | REV 01 | 740-016065 | PLB5VU7 | SFP-SR |  |
|  | MIC 1 | |  |  | REV 18 | 750-031969 | CACH8497 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | | PIC 2 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | |  | Xcvr 0 | REV 01 | 740-016068 | PQA1E9U | SFP-SR |  |
| FPC 11 |  | |  |  | REV 25 | 750-038491 | CACN4311 | MPCE Type 2 3D |  |
|  |  | |  | CPU | REV 08 | 711-038484 | CACM0804 | MPCE PMB 2G |  |
|  | MIC 0 | |  |  | REV 30 | 750-028387 | CACT9248 | 3D 4x 10GE XFP |  |
|  |  | | PIC 0 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  | |  | Xcvr 0 | REV 01 | 740-011607 | 43T046200105 | XFP-10G-LR |  |
|  |  | |  | Xcvr 1 | REV 01 | 740-011607 | 43T046200147 | XFP-10G-LR |  |
|  |  | | PIC 1 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  | |  | Xcvr 0 | REV 01 | 740-011607 | 43T046200016 | XFP-10G-LR |  |
|  |  | |  | Xcvr 1 | REV 01 | 740-011607 | 43T046200127 | XFP-10G-LR |  |
|  | MIC 1 | |  |  | REV 30 | 750-028387 | CACT9217 | 3D 4x 10GE XFP |  |
|  |  | | PIC 2 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  | |  | Xcvr 0 | REV 01 | 740-011607 | 43T046200148 | XFP-10G-LR |  |
|  |  | |  | Xcvr 1 | REV 01 | 740-011607 | 43T046200019 | XFP-10G-LR |  |
|  |  | | PIC 3 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  | |  | Xcvr 0 | REV 01 | 740-011607 | 43T046200126 | XFP-10G-LR |  |
|  |  | |  | Xcvr 1 | REV 01 | 740-011607 | 43T046200108 | XFP-10G-LR |  |
|  | Fan Tray 0 | | | | REV 08 | 740-031521 | ACAD0444 | Enhanced Fan Tray |  |
|  | Fan Tray 1 | | | | REV 08 | 740-031521 | ACAD0475 | Enhanced Fan Tray |  |
| Chassis |  | | | |  |  | CW0213268716 | EX2200-24T-4G |  |
| Routing Engine 0 | | | | |  | 750-026468 | CW0213268716 | EX2200-24T-4G |  |
| FPC 0 | | | | | REV 24 | 750-026468 | CW0213268716 | EX2200-24T-4G |  |
|  | CPU |  | | | REV 24 | BUILTIN | BUILTIN | FPC CPU |  |
|  |  | PIC 0 | |  |  | BUILTIN | BUILTIN | 24x 10/100/1000 Base-T |  |
|  |  | PIC 1 | |  | REV 24 | 750-026468 | CW0213268716 | 4x GE SFP |  |
|  |  |  | | Xcvr 0 | REV 01 | 740-011614 | PK420V4 | SFP-LX10 | Free |
|  |  |  | | Xcvr 1 | REV 01 | 740-011614 | PK64A2J | SFP-LX10 |  |
|  |  |  | | Xcvr 2 | REV 01 | 740-011614 | PK64AA0 | SFP-LX10 |  |
|  |  |  | | Xcvr 3 | REV 01 | 740-031850 | PPN09E6 | SFP-LX10 |  |
|  | Power Supply 0 | | | |  |  |  | PS 100W AC |  |
|  | Fan Tray | | | |  |  |  | Fan Tray |  |

| Hardware inventory: Dar es Salaam | | | | | | | | | |
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|  | Item | | | Version | Part number | Serial number | Description | Allocated to: | |
| Chassis |  | | |  |  | JN12289B7AFA | MX960 |  | |
|  | Midplane | | | REV 04 | 750-047849 | ACRA6988 | Enhanced MX960 Backplane |  | |
|  | FPM Board | | | REV 03 | 710-014974 | CABL4570 | Front Panel Display |  | |
|  | PDM | | | Rev 03 | 740-013110 | QCS171651BC | Power Distribution Module |  | |
|  | PEM 0 | | | Rev 07 | 740-029344 | QCS1719V0KC | DC 4.1kW Power Entry Module |  | |
|  | PEM 1 | | | Rev 07 | 740-029344 | QCS1719V0KC | DC 4.1kW Power Entry Module |  | |
|  | PEM 2 | | | Rev 07 | 740-029344 | QCS1719V0XW | DC 4.1kW Power Entry Module |  | |
|  | PEM 3 | | | Rev 07 | 740-029344 | QCS1719V0KM | DC 4.1kW Power Entry Module |  | |
|  | Routing Engine 0 | | | REV 08 | 740-031116 | 9016317398 | RE-S-1800x4 |  | |
|  | Routing Engine 1 | | | REV 08 | 740-031116 | 9013043013 | RE-S-1800x4 |  | |
|  | CB0 | | | REV 15 | 710-021523 | CABE9239 | MX SCB |  | |
|  | CB 1 | | | REV 15 | 710-021523 | CABG2324 | MX SCB |  | |
|  | CB 2 | | | REV 10 | 710-021523 | CABG2359 | MX SCB |  | |
| FPC 1 |  |  |  | REV 07 | 750-063747 | CANB5198 | MPCE Type 1 3D |  | |
|  |  |  | CPU | REV 04 | 711-063749 | CANC1106 | MPCE PMB 2G |  | |
|  | MIC 0 |  |  | REV 18 | 750-031969 | CABW5968 | MIC-3D-4OC3OC12-1OC48 |  | |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  | |
|  |  |  | Xcvr 2 | REV 01 | 740-016066 | PPK3E9G | SFP-IR |  | |
|  |  |  | Xcvr 3 | REV 01 | 740-016066 | PQS0XS9 | SFP-IR |  | |
|  | MIC 1 |  |  | REV 27 | 750-028392 | CABH9563 | 3D 20x 1GE(LAN) SFP |  | |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  | |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPP687X | SFP-LX10 |  | |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PQA3L9U | SFP-LX10 |  | |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PPM5PPY | SFP-LX10 |  | |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PPM67C2 | SFP-LX10 |  | |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  | |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PPM5P7E | SFP-LX10 |  | |
|  |  |  | Xcvr 2 | REV 01 | 740-031850 | AC1650SA5DX | SFP-LX10 |  | |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PPM67MB | SFP-LX10 |  | |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PPM66HU | SFP-LX10 |  | |
| FPC 5 |  |  |  | REV 10 | 750-038489 | CABH2252 | MPCE Type 1 3D |  | |
|  |  |  | CPU | REV 04 | 711-038484 | CABL7289 | MPCE PMB 2G |  | |
|  | MIC 0 |  |  | REV 18 | 750-031969 | CABW5983 | MIC-3D-4OC3OC12-1OC48 |  | |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  | |
|  |  |  | Xcvr 0 | REV 01 | 740-016066 | PTA136R | SFP-IR |  | |
|  |  |  | Xcvr 1 | REV 01 | 740-016066 | PQS587X | SFP-IR |  | |
|  |  |  | Xcvr 2 | REV 01 | 740-016066 | PPK2LBL | SFP-IR |  | |
|  |  |  | Xcvr 3 | REV 01 | 740-016066 | PPK2LB4 | SFP-IR |  | |
|  | MIC 1 |  |  | REV 27 | 750-028392 | CABH9493 | 3D 20x 1GE(LAN) SFP |  | |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  | |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPR6504 | SFP-LX10 |  | |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  | |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | AC1650SA5DY | SFP-LX10 |  | |
| FPC 11 |  |  |  | REV 06 | 750-063744 | CAHG3580 | MPCE Type 2 3D |  | |
|  |  |  | CPU | REV 04 | 711-063749 | CAHG5783 | MPCE PMB 2G |  | |
|  | MIC 0 |  |  | REV 31 | 750-028387 | CAHG9770 | 3D 4x 10GE XFP |  | |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  | |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | UWJ11U8 | XFP-10G-LR |  | |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | UWJ0WC1 | XFP-10G-LR |  | |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  | |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | UWJ0SWS | XFP-10G-LR |  | |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 6YT046200035 | XFP-10G-LR |  | |
|  | MIC 1 |  |  | REV 31 | 750-028387 | CAHG9924 | 3D 4x 10GE XFP |  | |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  | |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | UWE1DW1 | XFP-10G-LR |  | |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | UWJ11Q7 | XFP-10G-LR |  | |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  | |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | UWG1P3L | XFP-10G-LR |  | |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | UWG1P8D | XFP-10G-LR |  | |
|  | Fan Tray 0 | | | REV 08 | 740-031521 | ACDA1434 | Enhanced Fan Tray |  | |
|  | Fan Tray 1 | | | REV 08 | 740-031521 | ACDA1489 | Enhanced Fan Tray |  | |
|  |  | | |  |  |  |  |  | |
| Chassis |  | | |  |  | HX0213213033 | EX2200-24T-DC-4G |  |  |
| Routing Engine 0 | | | | REV 06 | 750-037904 | HX0213213033 | EX2200 24-PORT DC |  |  |
| FPC 0 | | | | REV 06 | 750-037904 | HX0213213033 | EX2200 24-PORT DC |  |  |
|  | CPU |  | |  | BUILTIN | BUILTIN | FPC CPU |  |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 24x 10/100/1000 Base-T |  |  |
|  |  | PIC 1 |  |  | 750-037904 | HX0213213033 | 4x GE SFP |  |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ1E3W | SFP-LX10 |  |  |
|  | Power Supply 0 | | |  |  |  | PS 100W DC |  |  |
|  | Fan Tray | | |  |  |  | Fan Tray |  |  |

| Hardware inventory: Nairobi | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Item | | | Version | Part number | Serial number | Description | Allocated to: |
| Chassis |  | | |  |  | JN122AF64AFA | MX960 |  |
|  | Midplane | | | REV 04 | 750-047849 | ACRA6133 | Enhanced MX960 Backplane |  |
|  | FPM Board | | | REV 03 | 710-014974 | CABL4473 | Front Panel Display |  |
|  | PDM | | | Rev 03 | 740-013110 | QCS1723508B | Power Distribution Module |  |
|  | PEM 0 | | | Rev 10 | 740-027760 | QCS1745N09L | PS 4.1kW; 200-240V AC in |  |
|  | PEM 1 | | | Rev 10 | 740-027760 | QCS1922N06H | PS 4.1kW; 200-240V AC in |  |
|  | PEM 2 | | | Rev 10 | 740-027760 | QCS1723N0AU | PS 4.1kW; 200-240V AC in |  |
|  | PEM 3 | | | Rev 10 | 740-027760 | QCS1723N080 | PS 4.1kW; 200-240V AC in |  |
|  | Routing Engine 0 | | | REV 08 | 740-031116 | 9009146645 | RE-S-1800x4 |  |
|  | Routing Engine 1 | | | REV 08 | 740-031116 | 9009140450 | RE-S-1800x4 |  |
|  | CB0 | | | REV 10 | 710-021523 | CABE1501 | MX SCB |  |
|  | CB 1 | | | REV 10 | 710-021523 | CABE9232 | MX SCB |  |
|  | CB 2 | | | REV 10 | 710-021523 | CABE1387 | MX SCB |  |
| FPC 0 |  |  |  | REV 10 | 750-038489 | CABG2555 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABJ2308 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 19 | 750-031969 | CADP5469 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 0 | REV 01 | 740-016066 | PPK2LC7 | SFP-IR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-016066 | PPK3DWP | SFP-IR |  |
|  |  |  | Xcvr 2 | REV 01 | 740-016066 | PPK2LCY | SFP-IR |  |
|  |  |  | Xcvr 3 | REV 01 | 740-016066 | PPK3E2S | SFP-IR |  |
|  | MIC 1 |  |  | REV 27 | 750-028392 | CABH9482 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ1CKP | SFP-LX10 |  |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PPQ1CQ7 | SFP-LX10 |  |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PPM5PAT | SFP-LX10 |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ1CLJ | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PPM66GV | SFP-LX10 |  |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PPQ1DGR | SFP-LX10 |  |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PQ54QUU | SFP-LX10 |  |
| FPC 5 |  |  |  | REV 10 | 750-038489 | CABH6055 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABL1489 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 27 | 750-028392 | CABH9311 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | AC1650SA5DU | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011614 | ALD13101040 | SFP-LX10 |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | AC1650SA5DT | SFP-LX10 |  |
|  | MIC 1 |  |  | REV 18 | 750-031969 | CABK1243 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
| FPC 7 |  |  |  | REV 10 | 750-038491 | CABJ7151 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABL7339 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 31 | 750-028387 | CAHG9717 | 3D 4x 10GE XFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | UWJ0SVX | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | UWJ0Z8G | XFP-10G-LR |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  | MIC 1 |  |  | REV 28 | 750-028387 | CABH1889 | 3D 4x 10GE XFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 36T685100114 | XFP-10G-LR |  |
| FPC 9 |  |  |  | REV 18 | 750-038489 | CADR9484 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 06 | 711-038484 | CADR9933 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 15 | 750-031969 | CABB4386 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 3 | REV 01 | 740-016063 | PSL378D | SFP-IR |  |
|  | MIC 1 |  |  | REV 05 | 750-060558 | CAMB9713 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
| FPC 11 |  |  |  | REV 10 | 750-038491 | CABJ8798 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABH8047 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 31 | 750-028387 | CAHG9910 | 3D 4x 10GE XFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | UWJ0Z4W | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 6YT046200042 | XFP-10G-LR |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | UWE1E5J | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | UWG1PAS | XFP-10G-LR |  |
|  | MIC 1 |  |  | REV 28 | 750-028387 | CABH1899 | 3D 4x 10GE XFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 33T694100070 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 33T694100032 | XFP-10G-LR |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 6YT046200037 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | UWJ0SYQ | XFP-10G-LR |  |
|  | Fan Tray 0 | | | REV 08 | 740-031521 | ACDA0602 | Enhanced Fan Tray |  |
|  | Fan Tray 1 | | | REV 08 | 740-031521 | ACDA0601 | Enhanced Fan Tray |  |
| Chassis |  | | |  |  | CW0213268499 | EX2200-24T-4G |  |
| Routing Engine 0 | | | | REV 24 | 750-026468 | CW0213268499 | EX2200-24T-4G |  |
| FPC 0 | | | | REV 24 | 750-026468 | CW0213268499 | EX2200-24T-4G |  |
|  | CPU |  | |  | BUILTIN | BUILTIN | FPC CPU |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 24x 10/100/1000 Base-T |  |
|  |  | PIC 1 |  | REV 24 | 750-026468 | CW0213268499 | 4x GE SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPM5PR0 | SFP-LX10 |  |
|  | Power Supply 0 | | |  |  |  | PS 100W AC |  |
|  | Fan Tray | | |  |  |  | Fan Tray |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hardware inventory: London | | | | | | | | |
|  | Item | | | Version | Part number | Serial number | Description | Allocated to: |
| Chassis |  | | |  |  | JN122AFB2AFA | MX960 |  |
|  | Midplane | | | REV 04 | 750-047849 | ACRA6254 | Enhanced MX960 Backplane |  |
|  | FPM Board | | | REV 03 | 710-014974 | CABL4469 | Front Panel Display |  |
|  | PDM | | | Rev 03 | 740-013110 | QCS1723506U | Power Distribution Module |  |
|  | PEM 0 | | | Rev 10 | 740-027760 | QCS1723N07N | PS 4.1kW; 200-240V AC in |  |
|  | PEM 1 | | | Rev 10 | 740-027760 | QCS1723N0B0 | PS 4.1kW; 200-240V AC in |  |
|  | PEM 2 | | | Rev 10 | 740-027760 | QCS2442N0U6 | PS 4.1kW; 200-240V AC in |  |
|  | PEM 3 | | | Rev 10 | 740-027760 | QCS1723N07V | PS 4.1kW; 200-240V AC in |  |
|  | Routing Engine 0 REV 08 | | | Rev 8 | 740-031116 | 9013043181 | RE-S-1800x4 |  |
|  | Routing Engine 1 REV 08 | | | Rev 8 | 740-031116 | 9013043144 | RE-S-1800x4 |  |
|  | CB 0 | | | REV 15 | 710-021523 | CABG2283 | MX SCB |  |
|  | CB 1 | | | REV 15 | 710-021523 | CABE9129 | MX SCB |  |
|  | CB 2 | | | REV 14 | 710-021523 | CAAT8244 | MX SCB |  |
| FPC 0 |  |  |  | REV 30 | 750-028467 | ABBJ6946 | MPC 3D 16x 10GE |  |
|  |  |  | CPU | REV 10 | 711-029089 | ABBM4126 | AMPC PMB |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |  |
| FPC 1 |  |  |  | REV 10 | 750-038489 | CABH6164 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABL1428 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 18 | 750-031969 | CABK1245 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 0 | REV 01 | 740-016063 | PPE2F8C | SFP-IR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-016063 | PPE2F89 | SFP-IR |  |
|  |  |  | Xcvr 2 | REV 01 | 740-016063 | PPE2FJP | SFP-IR |  |
|  |  |  | Xcvr 3 | REV 01 | 740-016063 | PPL262D | SFP-IR |  |
|  | MIC 1 |  |  | REV 27 | 750-028392 | CABH9388 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ1WJJ | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PPQ1WPB | SFP-LX10 |  |
|  |  |  | Xcvr 2 | REV 01 | 740-031850 | PPQ1DPN | SFP-LX10 |  |
|  |  |  | Xcvr 3 | REV 01 | 740-031850 | PPQ1WAC | SFP-LX10 |  |
|  |  |  | Xcvr 4 | REV 01 | 740-031850 | PPQ1CLM | SFP-LX10 |  |
|  |  |  | Xcvr 5 | REV 01 | 740-031850 | PPQ1CEQ | SFP-LX10 |  |
|  |  |  | Xcvr 6 | REV 01 | 740-031850 | PPQ1WL9 | SFP-LX10 |  |
|  |  |  | Xcvr 7 | REV 01 | 740-031850 | PPQ1WJG | SFP-LX10 |  |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PPQ1C9Q | SFP-LX10 |  |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PPQ1W6Y | SFP-LX10 |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PPQ1E9W | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PPQ1CAP | SFP-LX10 |  |
|  |  |  | Xcvr 2 | REV 01 | 740-031850 | PPQ1WAA | SFP-LX10 |  |
|  |  |  | Xcvr 3 | REV 01 | 740-031850 | PPQ1WAD | SFP-LX10 |  |
|  |  |  | Xcvr 4 | REV 01 | 740-031850 | PPQ1D9N | SFP-LX10 |  |
|  |  |  | Xcvr 5 | REV 01 | 740-031850 | PPQ1WEW | SFP-LX10 |  |
|  |  |  | Xcvr 6 | REV 01 | 740-031850 | PPQ1VSP | SFP-LX10 |  |
|  |  |  | Xcvr 7 | REV 01 | 740-031850 | PPQ1W9Q | SFP-LX10 |  |
|  |  |  | Xcvr 8 | REV 01 | 740-031850 | PPQ1CLK | SFP-LX10 |  |
|  |  |  | Xcvr 9 | REV 01 | 740-016063 | PPE2F8D | UNSUPPORTED |  |
| FPC 2 |  |  |  | REV 10 | 750-038489 | CABG2409 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABL1293 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 18 | 750-031969 | CABW5969 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 0 | REV 01 | 740-016066 | PPK2LD1 | SFP-IR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-016066 | PPK3DXM | SFP-IR |  |
|  |  |  | Xcvr 2 | REV 01 | 740-016066 | PTA136E | SFP-IR |  |
|  |  |  | Xcvr 3 | REV 01 | 740-016066 | PT92S7N | SFP-IR |  |
|  | MIC 1 |  |  | REV 18 | 750-031969 | CABH0745 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 0 | REV 01 | 740-016066 | PPK3E2G | SFP-IR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-016063 | PPE2F8K | SFP-IR |  |
|  |  |  | Xcvr 2 | REV 01 | 740-016063 | PPL269R | SFP-IR |  |
|  |  |  | Xcvr 3 | REV 01 | 740-016063 | PPE2F7Z | SFP-IR |  |
| FPC 3 |  |  |  | REV 10 | 750-038489 | CABH6093 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABL1433 | MPCE PMB 2G |  |
|  | MIC 1 |  |  | REV 27 | 750-028392 | CABH9322 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PQA44U0 | SFP-LX10 |  |
|  |  |  | Xcvr 5 |  | NON-JNPR | 00000MTC11240252 | SFP-T |  |
|  |  |  | Xcvr 6 |  | NON-JNPR | 00000MTC112401ZW | SFP-T |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 5 |  | NON-JNPR | 00000MTC112400PE | SFP-T |  |
|  |  |  | Xcvr 6 |  | NON-JNPR | 00000MTC112401SG | SFP-T |  |
|  |  |  | Xcvr 9 | REV 01 | 740-031850 | PPQ1V8N | SFP-LX10 |  |
| FPC 4 |  |  |  | REV 22 | 750-044444 | CABF7142 | MPCE Type 2 3D P |  |
|  |  |  | CPU | REV 08 | 711-038484 | CABF8540 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 28 | 750-028387 | CABH1951 | 3D 4x 10GE XFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 36T685100108 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 36T685100155 | XFP-10G-LR |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 33T694100066 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 2XT694100010 | XFP-10G-LR |  |
|  | MIC 1 |  |  | REV 28 | 750-028387 | CABH1900 | 3D 4x 10GE XFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 36T685100011 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 2XT694100013 | XFP-10G-LR |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 36T685100009 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 36T685100016 | XFP-10G-LR |  |
|  |  |  | QXM 0 | REV 07 | 711-028408 | CABB0073 | MPC QXM |  |
|  |  |  | QXM 1 | REV 07 | 711-028408 | CABC5276 | MPC QXM |  |
| FPC 8 |  |  |  | REV 16 | 750-038491 | CACV3449 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 06 | 711-038484 | CACW6633 | MPCE PMB 2G |  |
|  | MIC 1 |  |  | REV 30 | 750-028387 | CACT9291 | 3D 4x 10GE XFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 43T046200133 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 43T046200137 | XFP-10G-LR |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 43T046200072 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 43T046200027 | XFP-10G-LR |  |
| FPC 9 |  |  |  | REV 10 | 750-038489 | CABH6084 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABL0856 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 18 | 750-031969 | CABK1236 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 0 | REV 01 | 740-016066 | PPK3E2F | SFP-IR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-016066 | PPK2LCS | SFP-IR |  |
|  |  |  | Xcvr 2 | REV 01 | 740-016063 | PPL269Z | SFP-IR |  |
| FPC 10 |  |  |  | REV 10 | 750-038489 | CABG2498 | MPCE Type 1 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABK4755 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 18 | 750-031969 | CABY5258 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 0 | REV 01 | 740-016063 | PPE2F8H | SFP-IR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-016063 | PPL26A8 | SFP-IR |  |
|  |  |  | Xcvr 2 | REV 01 | 740-016063 | PPL26A0 | SFP-IR |  |
|  |  |  | Xcvr 3 | REV 01 | 740-016063 | PPE3E8L | SFP-IR |  |
| FPC 11 |  |  |  | REV 10 | 750-038491 | CABJ8864 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 04 | 711-038484 | CABH8235 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 30 | 750-028387 | CACT9220 | 3D 4x 10GE XFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 43T046200089 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 43T046200175 | XFP-10G-LR |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 43T046200139 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 43T046200044 | XFP-10G-LR |  |
|  | MIC 1 |  |  | REV 28 | 750-028387 | CABH1941 | 3D 4x 10GE XFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 37T685100358 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 37T685100298 | XFP-10G-LR |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 31T694100120 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | 33T694100038 | XFP-10G-LR |  |
|  | Fan Tray 0 | | | REV 08 | 740-031521 | ACDA1157 | Enhanced Fan Tray |  |
|  | Fan Tray 1 | | | REV 08 | 740-031521 | ACDA1203 | Enhanced Fan Tray |  |
| Chassis |  | | |  |  | CW0213268495 | EX2200-24T-4G |  |
| Routing Engine 0 | | | | REV 24 | 750-026468 | CW0213268495 | EX2200-24T-4G |  |
| FPC 0 | | | | REV 24 | 750-026468 | CW0213268495 | EX2200-24T-4G |  |
|  | CPU |  | |  | BUILTIN | BUILTIN | FPC CPU |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 24x 10/100/1000 Base-T |  |
|  |  | PIC 1 |  | REV 24 | 750-026468 | CW0213268495 | 4x GE SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011614 | PK64A5J | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PPM6748 | SFP-LX10 |  |
|  |  |  | Xcvr 2 | REV 01 | 740-011614 | PK64J6D | SFP-LX10 |  |
|  |  |  | Xcvr 3 | REV 01 | 740-011614 | PK64K0R | SFP-LX10 |  |
|  | Power Supply 0 | | |  |  |  | PS 100W AC |  |
|  | Fan Tray | | |  |  |  | Fan Tray |  |

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| Hardware inventory: Moanda | | | | | | | | |
|  | Item | | | Version | Part number | Serial number | Description | Allocated to: |
| Chassis |  | | |  |  | AM796 | MX10-T |  |
|  | Midplane | | | REV 14 | 711-038213 | CAFZ2809 | Enhanced MX960 Backplane |  |
|  | PEM 0 | | | Rev 06 | 740-028288 | 1GA75480065 | AC Power Entry Module |  |
|  | PEM 1 | | | Rev 06 | 740-028288 | 1GA75480072 | AC Power Entry Module |  |
|  | Routing Engine | | |  | BUILTIN | BUILTIN |  |  |
|  | TFEB 0 | | |  | BUILTIN | BUILTIN | Forwarding Engine Processor |  |
|  | TFEB QXM 0 | | |  | 711-028408 | CAGA3711 |  |  |
| FPC 0 |  |  |  |  | BUILTIN | BUILTIN | MPC BUILTIN |  |
|  | MIC 0 |  |  |  | BUILTIN | BUILTIN | 4x 10GE XFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 4x 10GE XFP |  |
|  | MIC 1 |  |  | REV 36 | 750-028392 | CAKW3731 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
| FPC 1 |  |  |  |  | BUILTIN | BUILTIN | MPC BUILTIN |  |
|  | MIC 0 |  |  | REV 35 | 750-028392 | CAGF6979 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | AC1532SA06X | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | NS31L61 | SFP-LX10 |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | NS31MS2 | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | NS30YYL | SFP-LX10 |  |
|  |  |  | Xcvr 2 | REV 01 | 740-031850 | NS30YZJ | SFP-LX10 |  |
|  |  |  | Xcvr 3 | REV 01 | 740-031850 | NS31L5W | SFP-LX10 |  |
|  |  |  | Xcvr 4 | REV 01 | 740-016066 | PQS6H7T | UNSUPPORTED |  |
|  | Fan Tray | | |  |  |  | Fan tray |  |
| Chassis |  | | |  |  | CV0213033045 | EX2200-24T-4G |  |
| Routing Engine 0 | | | |  |  | CV0213033045 | EX2200-24T-4G |  |
| FPC 0 |  |  |  | REV 36 | 750-026464 | CV0213033045 | EX2200-24P-4G, POE |  |
|  | CPU |  |  |  | BUILTIN | BUILTIN | FPC CPU |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 24x 10/100/1000 Base-T |  |
|  |  | PIC 1 |  | REV 36 | 750-026464 | CV0213033045 | 4x GE SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | NS30Z0X | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | NS31L6D | SFP-LX10 |  |
|  | Power Supply 0 | | |  |  |  | PS 100W AC |  |
|  | Fan Tray | | |  |  |  | Fan Tray |  |

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| Hardware inventory: Bujumbura | | | | | | | | |
|  | Item | | | Version | Part number | Serial number | Description | Allocated to: |
| Chassis |  | | |  |  | BV798 | MX104 |  |
|  | Midplane | | | REV 60 | 750-062050 | CALX0282 |  |  |
|  | FPM Board | | |  |  |  |  |  |
|  | PDM | | |  |  |  |  |  |
|  | PEM 0 | | | REV 05 | 740-045933 | 1H178240149 | AC Power Entry Module |  |
|  | PEM 1 | | | REV 05 | 740-045933 | 1H178310086 | AC Power Entry Module |  |
|  | Routing Engine 0 | | | REV 05 | 750-061985 | CALL7481 |  |  |
|  | Routing Engine 1 | | | REV 05 | 750-061985 | CALL7528 |  |  |
|  | AFEB 0 | | |  | BUILTIN | BUILTIN | Forwarding Engine Processor |  |
| FPC 0 |  |  |  |  | BUILTIN | BUILTIN | MPC BUILTIN |  |
|  | MIC 0 |  |  | REV 37 | 750-028392 | CALY1984 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | AC1910SA85R | SFP-LX10 |  |
|  |  |  | Xcvr 5 | REV 01 | 740-031850 | AC1910SA85Y | SFP-LX10 |  |
|  |  |  | Xcvr 6 | REV 01 | 740-031850 | AC1910SA85Z | SFP-LX10 |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | AC1910SA869 | SFP-LX10 |  |
|  |  |  | Xcvr 5 | REV 01 | 740-031850 | AC1910SA860 | SFP-LX10 |  |
| FPC 1 |  |  |  |  | BUILTIN | BUILTIN | MPC BUILTIN |  |
|  | MIC 0 |  |  | REV 37 | 750-028392 | CALY1875 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | AC1910SA862 | SFP-LX10 |  |
|  |  |  | Xcvr 5 | REV 01 | 740-031850 | AC1910SA85N | SFP-LX10 |  |
|  |  |  | Xcvr 6 | REV 01 | 740-031850 | AC1910SA86B | SFP-LX10 |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | AC1910SA85U | SFP-LX10 |  |
|  |  |  | Xcvr 5 | REV 01 | 740-031850 | AC1910SA861 | SFP-LX10 |  |
| FPC 2 |  |  |  |  | BUILTIN | BUILTIN | MPC BUILTIN |  |
|  | MIC 0 |  |  |  | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031981 | J2W2005802 | SFP+-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031981 | J2W2005439 | SFP+-10G-LR |  |
|  | Fan Tray 0 | | |  |  |  |  |  |
|  | Fan Tray 1 | | |  |  |  |  |  |
| Chassis |  | | |  |  | CW0218520089 | EX2200-24T-4G |  |
| Routing Engine 0 | | | |  | 750-026468 | CW0218520089 | EX2200-24T-4G |  |
| FPC 0 |  |  |  | REV 32 | 750-026468 | CW0218520089 | EX2200-24T-4G |  |
|  | CPU |  |  |  | BUILTIN | BUILTIN | FPC CPU |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 24x 10/100/1000 Base-T |  |
|  |  | PIC 1 |  | REV 32 | 750-026468 | CW0218520089 | 4x GE SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | AC1910SA85P | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | AC1910SA85Q | SFP-LX10 |  |
|  | Power Supply 0 | | |  |  |  | PS 100W AC |  |
|  | Fan Tray | | |  |  |  | Fan Tray |  |

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| Hardware inventory: Blantyre | | | | | | | | |
|  | Item | | | Version | Part number | Serial number | Description | Allocated to: |
| Chassis |  | | |  |  | JN1264553AFB | MX480 |  |
|  | Midplane | | | REV 40 | 750-047862 | ACRH8483 | Enhanced MX480 Midplane |  |
|  | FPM Board | | | REV 04 | 760-059208 | CAHC5255 |  |  |
|  | PEM 0 | | | Rev 01 | 740-063046 | QCS1648U12V | PS 1.4-2.52kW; 90-264V AC in |  |
|  | PEM 1 | | | Rev 01 | 740-063046 | QCS1646U0H6 | PS 1.4-2.52kW; 90-264V AC in |  |
|  | PEM 2 | | | Rev 01 | 740-063046 | QCS1648U07K | PS 1.4-2.52kW; 90-264V AC in |  |
|  | PEM 3 | | | Rev 01 | 740-063046 | QCS1646U0NC | PS 1.4-2.52kW; 90-264V AC in |  |
|  | Routing Engine 0 | | | REV 03 | 740-051822 | 9016030388 |  |  |
|  | Routing Engine 1 | | | REV 03 | 740-051822 | 9016022785 |  |  |
|  | CB 0 | | | REV 05 | 750-062577 | CAHF1436 |  |  |
|  | CB 1 | | | REV 05 | 750-062577 | CAHF8114 |  |  |
| FPC 0 |  |  |  | REV 06 | 750-063744 | CAHG7498 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 04 | 711-063749 | CAHG9245 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 36 | 750-028392 | CAHG1359 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PWK0EH8 | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PWK0DF1 | SFP-LX10 |  |
|  |  |  | Xcvr 2 | REV 01 | 740-031850 | PWK0ED7 | SFP-LX10 |  |
|  |  |  | Xcvr 3 | REV 01 | 740-031850 | PWK0DFR | SFP-LX10 |  |
|  |  |  | Xcvr 4 | REV 01 | 740-031850 | PWK0EDA | SFP-LX10 |  |
|  | MIC 1 |  |  | REV 31 | 750-028387 | CAHG9886 | 3D 4x 10GE XFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | UWE1DZ7 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | UWE1UAJ | XFP-10G-LR |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 6YT046200053 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | UWJ11Y9 | XFP-10G-LR |  |
| FPC 3 |  |  |  | REV 06 | 750-063744 | CAHG3511 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 04 | 711-063749 | CAHG5830 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 36 | 750-028392 | CAHG1069 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PWK0CRD | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PWK0EC2 | SFP-LX10 |  |
|  | MIC 1 |  |  | REV 31 | 750-028387 | CAHF4087 | 3D 4x 10GE XFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  | Fan Tray 1 | | |  |  |  |  |  |
| Chassis |  | | |  |  | CW0216530658 | EX2200-24T-4G |  |
| Routing Engine 0 | | | | REV 28 | 750-026468 | CW0216530658 | EX2200-24T-4G |  |
| FPC 0 |  |  |  | REV 28 | 750-026468 | CW0216530658 | EX2200-24T-4G |  |
|  | CPU |  |  |  | BUILTIN | BUILTIN | FPC CPU |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 24x 10/100/1000 Base-T |  |
|  |  | PIC 1 |  | REV 28 | 750-026468 | CW0216530658 | 4x GE SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PWK0DSJ | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PWK0EBF | SFP-LX10 |  |
|  | Power Supply 0 | | |  |  |  | PS 100W AC |  |
|  | Fan Tray | | |  |  |  | Fan Tray |  |

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| Hardware inventory: Harare | | | | | | | | |
|  | Item | | | Version | Part number | Serial number | Description | Allocated to: |
| Chassis |  | | |  |  | JN12644C0AFB | MX480 |  |
|  | Midplane | | | REV 40 | 750-047862 | ACRH8112 | Enhanced MX960 Backplane |  |
|  | FPM Board | | | REV 04 | 760-059208 | CAHC4488 |  |  |
|  | PEM 0 | | | Rev 01 | 740-063046 | QCS1648U17X |  |  |
|  | PEM 1 | | | Rev 01 | 740-063046 | QCS1648U0WA |  |  |
|  | PEM 2 | | | Rev 01 | 740-063046 | QCS1648U17H |  |  |
|  | PEM 3 | | | Rev 01 | 740-063046 | QCS1648U07V |  |  |
|  | Routing Engine 0 | | | REV 03 | 740-051822 | 9016033671 |  |  |
|  | Routing Engine 1 | | | REV 03 | 740-051822 | 9016034082 |  |  |
|  | CB 0 | | | REV 05 | 750-062577 | CAHF8152 |  |  |
|  | CB 1 | | | REV 05 | 750-062577 | CAHE5042 |  |  |
| FPC 0 |  |  |  | REV 06 | 750-063744 | CAHE4688 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 04 | 711-063749 | CAHF3385 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 31 | 750-028387 | CAHF4043 | 3D 4x 10GE XFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 6YT046200052 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | UWF1TFJ | XFP-10G-LR |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  | MIC 1 |  |  | REV 36 | 750-028392 | CAHD2357 | 3D 20x 1GE(LAN) SFP |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PWK0CR7 | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PWK0EB5 | SFP-LX10 |  |
|  |  | PIC 3 |  |  | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-031850 | PWK0DSD | SFP-LX10 |  |
|  |  |  | Xcvr 1 | REV 01 | 740-031850 | PWK0EDE | SFP-LX10 |  |
| FPC 3 |  |  |  | REV 06 | 750-063744 | CAHG3418 | MPCE Type 2 3D |  |
|  |  |  | CPU | REV 04 | 711-063749 | CAHG5859 | MPCE PMB 2G |  |
|  | MIC 0 |  |  | REV 31 | 750-028387 | CAHG9828 | 3D 4x 10GE XFP |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  |  |  | Xcvr 0 | REV 01 | 740-011607 | 6YT046200028 | XFP-10G-LR |  |
|  |  |  | Xcvr 1 | REV 01 | 740-011607 | UWJ0WF5 | XFP-10G-LR |  |
|  |  | PIC 1 |  |  | BUILTIN | BUILTIN | 2x 10GE XFP |  |
|  | MIC 1 |  |  | REV 18 | 750-031969 | CABW5977 | MIC-3D-4OC3OC12-1OC48 |  |
|  |  | PIC 2 |  |  | BUILTIN | BUILTIN | MIC-3D-4OC3OC12-1OC48 |  |
|  |  |  | Xcvr 0 |  | NON-JNPR | HA14390540053 | SFP-LR |  |
|  | Fan Tray | | |  |  |  | Fan Tray |  |
| Chassis |  | | |  |  |  | EX2200-24T-4G |  |
| Routing Engine 0 | | | |  |  |  | EX2200-24T-4G |  |
| FPC 0 | | | |  |  |  | EX2200-24T-4G |  |
|  | CPU |  | |  | BUILTIN | BUILTIN | FPC CPU |  |
|  |  | PIC 0 |  |  | BUILTIN | BUILTIN | 24x 10/100/1000 Base-T |  |
|  |  | PIC 1 |  |  |  |  | 4x GE SFP |  |
|  |  |  |  |  |  |  | SFP-LX10 |  |
|  | Power Supply 0 | | |  |  |  | PS 100W AC |  |
|  | Fan Tray | | |  |  |  | Fan Tray |  |

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| --- | --- | --- | --- | --- | --- | --- |
| Hardware inventory: Johannesburg | | | | | | |
| Item | | | Version | Part number | Serial number | Description |
| Chassis | | | | | JN124F27AAFB | MX480 |
|  | Midplane | | REV 04 | 750-047862 | ACRD8992 | Enhanced MX480 Midplane |
|  | FPM Board | | REV 02 | 710-017254 | CADR0583 | Front Panel Display |
|  | PEM 0 | | Rev 10 | 740-029970 | QCS1441U1F2 | PS 1.4-2.52kW; 90-264V AC in |
|  | PEM 1 | | Rev 09 | 740-029970 | QCS1106U0JS | PS 1.4-2.52kW; 90-264V AC in |
|  | PEM 2 | | Rev 10 | 740-029970 | QCS1441U17V | PS 1.4-2.52kW; 90-264V AC in |
|  | PEM 3 | | Rev 10 | 740-029970 | QCS1441U1E7 | PS 1.4-2.52kW; 90-264V AC in |
|  | Routing Engine 0 | | REV 10 | 740-031116 | 9009221077 | RE-S-1800x4 |
|  | Routing Engine 1 | | REV 12 | 740-031116 | 9009244758 | RE-S-1800x4 |
|  | CB 0 | | REV 02 | 750-055976 | CADW3568 | Enhanced MX SCB 2 |
|  | CB 1 | | REV 09 | 750-062572 | CAJN9815 | Enhanced MX SCB 2 |
| FPC 0 | | | REV 36 | 750-028467 | ABCD4814 | MPC 3D 16x 10GE |
|  | CPU | | REV 12 | 711-029089 | ABBY1539 | AMPC PMB |
|  | PIC 0 | | BUILTIN | BUILTIN |  | 4x 10GE(LAN) SFP+ |
|  |  | Xcvr 0 | REV 01 | 740-021309 | AJN16H0060390 | SFP+-10G-LR |
|  |  | Xcvr 1 | REV 01 | 740-021309 | 2209071077 | SFP+-10G-LR |
|  |  | Xcvr 2 | REV 01 | 740-021309 | 2303231032 | SFP+-10G-LR |
|  |  | Xcvr 3 | REV 01 | 740-021309 | 2303231021 | SFP+-10G-LR |
|  | PIC 1 | | BUILTIN | BUILTIN |  | 4x 10GE(LAN) SFP+ |
|  |  | Xcvr 0 | REV 01 | 740-021309 | 2303231024 | SFP+-10G-LR |
|  |  | Xcvr 1 | REV 01 | 740-021309 | 2303231025 | SFP+-10G-LR |
|  |  | Xcvr 2 | REV 01 | 740-021309 | 2303231027 | SFP+-10G-LR |
|  |  | Xcvr 3 | REV 01 | 740-021309 | 2303231030 | SFP+-10G-LR |
|  | PIC 2 | |  |  |  | 4x 10GE(LAN) SFP |
|  | PIC 3 | |  |  |  | 4x 10GE(LAN) SFP+ |
| FPC 1 | | | REV 29 | 750-028467 | ABBJ3508 | MPC 3D 16x 10GE |
|  | CPU | | REV 10 | 711-029089 | ABBM3719 | AMPC PMB |
|  | PIC 0 |  | BUILTIN | BUILTIN |  | 4x 10GE(LAN) SFP+ |
|  |  | Xcvr 0 | REV 01 | 740-021309 | AJN16H0060389 | SFP+-10G-LR |
|  |  | Xcvr 1 | REV 01 | 740-021309 | 2209071076 | SFP+-10G-LR |
|  |  | Xcvr 2 | REV 01 | 740-021309 | 2303231031 | SFP+-10G-LR |
|  |  | Xcvr 3 | REV 01 | 740-021309 | 2303231022 | SFP+-10G-LR |
|  | PIC 1 |  | BUILTIN | BUILTIN |  | 4x 10GE(LAN) SFP+ |
|  |  | Xcvr 0 | REV 01 | 740-021309 | 2303231023 | SFP+-10G-LR |
|  |  | Xcvr 1 | REV 01 | 740-021309 | 2303231026 | SFP+-10G-LR |
|  |  | Xcvr 2 | REV 01 | 740-021309 | 2303231028 | SFP+-10G-LR |
|  |  | Xcvr 3 | REV 01 | 740-021309 | 2303231029 | SFP+-10G-LR |
|  | PIC 2 |  | BUILTIN | BUILTIN |  | 4x 10GE(LAN) SFP+ |
|  | PIC 3 |  | BUILTIN | BUILTIN |  | 4x 10GE(LAN) SFP+ |
| Fan Tray | | | | | | Enhanced Left Fan Tray |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Hardware inventory: Gaborone | | | | | | |
| Item | | | Version | Part number | Serial number | Description |
| Chassis | | | | | JN124F32BAFB | MX480 |
|  | Midplane | | REV 04 | 750-047862 | ACRD7735 | Enhanced MX480 Midplane |
|  | FPM Board | | REV 02 | 710-017254 | ABDA5142 | Front Panel Display |
|  | PEM 0 | | Rev 10 | 740-029970 | QCS1441U178 | PS 1.4-2.52kW; 90-264V AC in |
|  | PEM 1 | | Rev 10 | 740-029970 | QCS1441U1BE | PS 1.4-2.52kW; 90-264V AC in |
|  | PEM 2 | | Rev 10 | 740-029970 | QCS1441U177 | PS 1.4-2.52kW; 90-264V AC in |
|  | PEM 3 | | Rev 10 | 740-029970 | QCS1446U009 | PS 1.4-2.52kW; 90-264V AC in |
|  | Routing Engine 0 | | REV 10 | 740-031116 | 9009212950 | RE-S-1800x4 |
|  | Routing Engine 1 | | REV 10 | 740-031116 | 9009212746 | RE-S-1800x4 |
|  | CB 0 | | REV 07 | 750-062572 | CAGX5665 | Enhanced MX SCB 2 |
|  | CB 1 | | REV 02 | 750-055976 | CAEC2507 | Enhanced MX SCB 2 |
| FPC 0 | | | REV 36 | 750-028467 | ABCD7047 | MPC 3D 16x 10GE |
|  | CPU | | REV 12 | 711-029089 | ABCH0242 | AMPC PMB |
|  | PIC 0 | | BUILTIN | BUILTIN |  | 4x 10GE(LAN) SFP+ |
|  |  | Xcvr 0 | REV 01 | 740-021309 | AJN16JR120031 | SFP+-10G-LR |
|  |  | Xcvr 1 | REV 01 | 740-021309 | AJN16JR120036 | SFP+-10G-LR |
|  |  | Xcvr 2 | REV 01 | 740-021309 | AJN16JR120037 | SFP+-10G-LR |
|  |  | Xcvr 3 | REV 01 | 740-021309 | AJN16JR120038 | SFP+-10G-LR |
|  | PIC 1 | | BUILTIN | BUILTIN |  | 4x 10GE(LAN) SFP+ |
|  |  | Xcvr 0 | REV 01 | 740-021309 | AJN16JR120040 | SFP+-10G-LR |
|  |  | Xcvr 1 | REV 01 | 740-021309 | AJN16JR120041 | SFP+-10G-LR |
|  | PIC 2 | |  |  |  | 4x 10GE(LAN) SFP |
|  | PIC 3 | |  |  |  | 4x 10GE(LAN) SFP+ |
| FPC 5 | | | REV 29 | 750-028467 | ABBJ3997 | MPC 3D 16x 10GE |
|  | CPU | | REV 10 | 711-029089 | ABBK9063 | AMPC PMB |
|  | PIC 0 |  | BUILTIN | BUILTIN |  | 4x 10GE(LAN) SFP+ |
|  |  | Xcvr 0 | REV 01 | 740-021309 | AJN16JR120035 | SFP+-10G-LR |
|  |  | Xcvr 1 | REV 01 | 740-021309 | AJN16JR120034 | SFP+-10G-LR |
|  |  | Xcvr 2 | REV 01 | 740-021309 | AJN16JR120033 | SFP+-10G-LR |
|  |  | Xcvr 3 | REV 01 | 740-021309 | AJN16JR120032 | SFP+-10G-LR |
|  | PIC 1 |  | BUILTIN | BUILTIN |  | 4x 10GE(LAN) SFP+ |
|  |  | Xcvr 0 | REV 01 | 740-021309 | AJN16JR120039 | SFP+-10G-LR |
|  |  | Xcvr 1 | REV 01 | 740-021309 | AJN16JR120045 | SFP+-10G-LR |
|  | PIC 2 |  | BUILTIN | BUILTIN |  | 4x 10GE(LAN) SFP+ |
|  | PIC 3 |  | BUILTIN | BUILTIN |  | 4x 10GE(LAN) SFP+ |
| Fan Tray | | | | | | Enhanced Left Fan Tray |

# ANNEX 3 PRICING

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | Capital cost for equipment, including chassis, control plane and transport plane modules, software and software feature licences. | | | |
| Country | City hosting PoP | Description of required equipment | Product Code/Part Number | Unit price in EUROS | Quantity required to meet specification | Total price in EUROS | Size (U of rackspace) |
| Kenya | SEACOM landing station Mombasa | | | | | | |
| Aggregation/core router | Mombasa | Redundant Power supply, redundant control plane, support for 10/40 and 100Gbps interfaces |  | 0 | 1 | 0 |  |
| LAN Switch |  | Rack mountable, Redundant power supplies, 24x1/10 Gbps ports with 40/100 Gbps uplink |  | 0 | 1 | 0 |  |
| OOB access router |  | Rack mountable, to 12 x 1Gbs interfaces (fibre and ethernet) |  |  | 1 |  |  |
| Installation and commissioning charges per PoP |  |  |  | 0 |  | 0 |  |
|  |  |  |  | Sub total for Country | | 0 |  |
| South Africa | SEACOM landing station Mtunzini | | | | | | |
| Aggregation/core router | Mtunzini | Redundant Power supply, redundant control plane, support for 10/40 and 100Gbps interfaces |  | 0 |  | 1 |  |
|  |  |  |  |  |  |  |  |
| LAN Switch |  | Rack mountable, Redundant power supplies, 24x1/10 Gbps ports with 40/100 Gbps uplink |  | 0 |  | 1 |  |
| OOB access router |  | Rack mountable, to 12 x 1Gbs interfaces (fibre and ethernet) |  | 0 |  | 0 |  |
| Installation and commissioning charges per PoP |  |  |  | 0 |  | 0 |  |
|  |  |  |  | Sub total for Country | | 0 |  |
| Djibouti | **Djibouti Data centre** | | | | | | |
| Aggregation/core router | Djibouti | Redundant Power supply, redundant control plane, support for 10/40 and 100Gbps interfaces |  | 0 |  | 1 |  |
|  |  |  |  |  |  |  |  |
| LAN Switch |  | Rack mountable, Redundant power supplies, 24x1/10 Gbps ports with 40/100 Gbps uplink |  | 0 |  | 1 |  |
| OOB access router |  | Rack mountable, to 12 x 1Gbs interfaces (fibre and ethernet) |  | 0 |  | 1 |  |
| Installation and commissioning charges per PoP |  |  |  | 0 |  | 0 |  |
|  |  |  |  | Sub total for Country | | 0 |  |
|  |  |  |  |  |  |  |  |

PRICING NOTES

* Note that as well as the 3 countries listed above, the extant PoPs will require new equipment or upgrades compatible with the installed equipment base to support higher interface speeds over the life of the framework.
* Bidders must identify commonly sourced components from the asset list and provide a catalogue of equipment pricing for the Framework Agreement, including pricing for a range of IP routing and switching products.
* Pricing for TAC support should be included with a range of flexible pricing models.
* Bidders are able to propose alternative OEMs to Juniper as part of the pricing catalogue so that the Alliance has greater flexibility in the future

# ANNEX 4 Comments and Suggested Improvements Template

|  |  |  |  |
| --- | --- | --- | --- |
| **Question No** | **Issue** | **Suggested Alternative Text / Approach** | **Importance: High/Med/Low** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Add rows as needed.