

MARIANA ISLANDS INTERNET EXCHANGE

Technical Specification, Version 1.2, April 30, 2018

(This specification may be superseded either in whole or in part, at a later time.)

ABSTRACT

The Mariana Islands Internet Exchange, or MARIIX, is a project operated and partially funded by the University of Guam’s Office of Information Technology (OIT). The purpose of MARIIX is to allow IP networks present in Guam to inter-connect with one another without sending traffic destined for each other’s networks through international links. The MARIIX network will operate independently of all other networks, and will serve only as a means of connection among IP networks that choose to peer at MARIIX. More information can be found at <https://www.mariix.net>.

SCOPE

This document provides the technical specifications which define the means of access, operation and restrictions that are necessary to fulfill the more general goals of MARIIX. The reader will need to have a clear understanding of IP routing among various, interconnected networks, as well as the consequences of incorrect routing. A firm grasp of router configuration will be necessary to implement the specifications described in this document.

CONVENTIONS

The following language conventions are used in the items of specification in this document:

Must, Shall or Mandatory

The item is an absolute requirement of the specifications.

Should or Recommend

The item should generally be followed for all but exceptional circumstances.

May or Optional

The item is truly optional and may be followed or ignored according to the needs of the implementer.

IP

Refers to both IPv4 and IPv6 protocols. Members are encouraged to use both IPv4 and IPv6 for peering at MARIIX.

CONTENTS

- 1.0 Means of Access
- 2.0 Necessary Equipment and Protocols
- 3.0 Routing Protocols, Rules and Configuration
- 4.0 Client Organization Acknowledgement of Specifications

1.0 Means of Access

- 1.1 Access to the MARIIX switch shall be via Ethernet. Members are responsible for setting up their own connectivity to the MARIIX switch.
- 1.2 University of Guam OIT shall be contacted for details of and arrangements for physical access for the member’s chosen connectivity media.
- 1.3 MARIIX strives to maintain very high levels of service for all the connected networks. The University of Guam and its staff shall make every effort possible to keep the MARIIX infrastructure and equipment operational.

2.0 Necessary Equipment and Protocols

- 2.1 Each network connecting to the MARIIX must have their own public autonomous system number (ASN), their own public IP address space registered with a Regional Internet Registry, and their own independent transit arrangements.
- 2.2 The physical connection to MARIIX is by either 1Gbps or 10Gbps Ethernet. MARIIX members must supply Cisco Nexus 3000 series compatible SFP’s to support their connection to MARIIX.
- 2.3 Members must use an IP router for connecting to the MARIIX.
- 2.4 Each network connecting to the MARIIX is allocated a maximum of two (2) physical connections to the MARIIX.
- 2.5 IP routers connecting to the MARIIX must have the capacity to perform IP routing using BGP version 4.
- 2.6 No servers or other equipment may be hosted at MARIIX without consent of the University of Guam OIT. Hosting of equipment may incur a fee towards the cost of the facility.

3.0 Routing Protocols, Rules and Configuration

- 3.1 MARIIX Peering LAN IP addresses are administered by UOG’s Office of Information Technology (OIT). Assignment of a MARIIX address will be made as part of the signed agreement between the MARIIX member and UOG OIT.
- 3.2 Peering at MARIIX must use BGP to ensure that a simple, maintainable peering interconnect among MARIIX client networks can be facilitated.
- 3.3 Members must be registered in the Peering Database (peeringdb.com)
- 3.4 Members are free to choose with whom they peer.
- 3.5 Members must peer with the MARIIX Services network router. MARIIX Services hosts

the MARIIX website and other services beneficial for and agreed by all members.

- 3.6 Members must perform route filtering according to international best practices (applying RFC8212 as necessary).
- 3.7 Members must not announce default route or the full BGP table to other MARIIX members.
- 3.8 MARIIX administration will monitor traffic levels and reserves the right to isolate networks from the MARIIX that are the source of unusually high traffic levels without prior notice. MARIIX administration will make every effort to contact the technical contact of the member through contact information provided on the MARIIX agreement prior to the shutdown of the connection.
- 3.9 Members must not leak IGP, DHCP announcements, or IPv6 Router Advertisements to the MARIIX LAN.
- 3.10 Members must not run network discovery protocols on the MARIIX LAN.
- 3.11 Administration and Technical Contact information must be kept up to date with the University of Guam OIT. This allows the MARIIX administration to notify and troubleshoot routing problems that may be affecting the client or other MARIIX member's connectivity.

4.0 Client Organization Acknowledgement of Specifications

Prior to connections of MARIIX service, the following statement shall be signed by a representative of the client organization and returned to:

Rommel Hidalgo, Chief Information Officer
University of Guam
Office of Information Technology
303 University Dr., UOG Station
Computer Center Rm. 104
Mangilao, GU 96913

FAX: 671-734-9422 or email: uognoc@uog.edu

I _____, being an authorized agent or representative of _____ (Provider) acknowledge that I have read and understood the Mariana Islands Internet Exchange Technical Specifications, version 1.2, and that the Provider will guarantee compliance with the specifications herein. I understand that non-compliance, in the event that it affects the operation of the Mariana Islands Internet Exchange, may require MARIIX administration to interrupt my service in order to restore proper operation.

Signed: _____

Date: _____

Title: _____

Network Operator Information

Organization: _____

Address: _____

Technical

Contact: _____

Technical

Phone: _____

Technical

Email: _____

Administrative

Contact: _____

Administrative

Phone: _____

Administrative

Email: _____

ASN: _____