



Republic of the Philippines
NATIONAL POLICE COMMISSION
PHILIPPINE NATIONAL POLICE
INFORMATION TECHNOLOGY MANAGEMENT SERVICE
Camp BGen Rafael T Crame, Quezon City
<http://www.itms.pnp.gov.ph>



TERMS OF REFERENCE

Procurement of One (1) Lot Information Communication Technology (ICT) Equipment

Version 3.0
May 25, 2018

TABLE OF CONTENTS

I. INTRODUCTION

A. Executive Summary

II. PROJECT OBJECTIVES

A. General Objectives

B. Specific Objectives

III. SCOPE OF WORK

A. Supplier's Scope of Work

1. Hardware

2. Software

3. Installation

B. PNP Scope of Work

IV. DETAILED TECHNICAL REQUIREMENTS

A. Minimum Equipment Specification

B. Trainings

C. Warranty and Guarantee Requirements

D. Warranty Coverage of Equipment

V. APPROVED BUDGET

VI. REFERENCES

ANNEX A

Network Diagram

I. INTRODUCTION

A. EXECUTIVE SUMMARY

To recognize the significance of investigation in crime solution efficiency and its crucial role in the over-all anti-criminality campaign of the Philippine National Police, the development of a modern and effective set of Information Systems.

The integration of IT solutions initiatives that are envisioned to make monitoring and reporting of crime incidents and cases more accurate. Its features include a database of all reported crime incidents in the police stations (Crime Information Reporting Analysis System - CIRAS), a web-based system designed to establish a central database system of pertinent information of all cases handled and investigated by Investigator-On-Case (IOC) of the Philippine National Police (Case Information Database Management System - CIDMS), a database of all warrants of arrest (e-Warrant), a database of criminals including pictures that may be utilized by authorized personnel in every police station in the country (e-Rogues), and a system which monitors PNP personnel's attendance during court hearings (e-Subpoena). The back-end database used by these systems is MySQL.

With the fast-growing IT industry and the rapid development of new IT solutions, there is a need to upgrade the existing systems and ICT equipment to keep pace with the current trend enabling faster data collection and processing, which in turn provided better investigative outputs. This will pave the way for the PNP Next Generation Investigation Solution (NGIS) which will play a vital role in the crime solution efficiency of the PNP.

With the above-mentioned points, the PNP shall invest in the enhancement of the ICT Equipment.

II. PROJECT OBJECTIVES

A. General Objective

The main objective of the procurement of ICT Equipment is to provide and modernize the system to converge with the current IT trend, which will influence greatly in the improvement of the PNP Crime Solution Efficiency.

B. Specific Objective

In essence, the procurement of the ICT equipment is geared towards improving the existing system, specifically to:

- a. Validate record in the existing PNP crime-related databases;
- b. Establish a central repository of all warrants of arrest;

- c. Build up fingerprint databases; and
- d. Integrate the existing crime-related databases.

III. SCOPE OF WORK

This project will be procured through “competitive bidding” under the category of **goods**. This method of procurement is open to participation by any interested party and which consists of the following processes: advertisement, pre- bid conference, receipt and opening of bids, evaluation of bids, post-qualification and award of contract.

A. Supplier’s Scope of Work:

The supply and delivery of ICT equipment compatible with PNP NGIS includes software and accessories but not limited to the following:

1. HARDWARE

a. Blade Server System

Quantity	ITEM
10 units	Enterprise Server
	five (5) High-end Blade Servers
	five (5) Mid-range Blade Servers
1 unit	Server Chassis
2 units	Storage Area Network
	one (1) Production SAN
	one (1) Backup Storage

b. Network Infrastructure

Quantity	ITEM
2 units	Firewall (Next Generation Firewall)
2 units	SAN Switch
2 units	Network Switch (ToR)
2 units	Cabinet Racks
1 unit	Rack Mountable UPS
1 lot	LAN Cabling

2. SOFTWARE

The software to be delivered shall be compatible with the existing crime-related PNP Information Systems. The supplier shall provide the necessary Software Development Kits (SDKs), Open Source Enterprise Operating System license, enterprise anti-virus for all the servers, seven (7) Open Source Enterprise Relational Database

Management System (RDBMS), four (4) Database Management Tools compatible with the operability of the RDBMS to be delivered, Secure Sockets Layer/Transport Layer Security Virtual Private Network (SSL/TLS VPN) Client License compatible with supplied Next Generation Firewall and other necessary installation tools.

3. INSTALLATION

The supplier shall provide the necessary installation, setup and configuration services of all deliverables, to include but not limited to hardware, software, network, and electrical.

B. PNP Scope of Work:

1. General Management of the Project;
2. Pay for the hardware, software, licenses and warranties of the ICT equipment as specified in Sec. III.A;
3. Attend all related trainings provided by the supplier as indicated in the project implementation schedule; and
4. Facilitate and Manage User Acceptance Testing.

IV. DETAILED TECHNICAL REQUIREMENT

A. IT EQUIPMENT

Below are the minimum specifications of the required items to be procured:

QTY	ITEM	SPECIFICATIONS
5	Blade Servers (high-end)	
	Processor	2 X 14 core processor, 2.4 GHz, 35M L3 cache or better
	Type	Blade
	Memory	8 X 16GB DDR4 RDIMM or better
	Controller	RAID 0,1, 10, 12Gbps or better
	Harddisk	2x2.5" 1.0TB 10k RPM SAS or better
	I/O Expansion	Industry Standard Slot 3 slots or better
	Software	Open Source Enterprise Operating System for 2 CPUs, include High Availability Software, with 1 year 24x7 service
	Features	SNMP or better

5	Blade Servers (mid-range)	
	Processor	2 x 2.2GHz, 10-core processor, 25M L3 cache or better
	Type	Blade
	Memory	8 X 16GB DDR4 RDIMM or better
	Controller	RAID 0,1, 10, 12Gbps or better
	Harddisk	2x2.5" 1.0TB 10k RPM SAS or better
	I/O Expansion	Industry Standard Slot 3 slots or better
	Software	Open Source Enterprise Operating System for 2 CPUs, include High Availability Software, with 1 year 24x7 service
	Features	SNMP or better

1	Blade Server Chassis	
	Category	Branded, brand new and compatible with the blade server
	Chassis	Supports at least 16 units blade in single chassis
	Power Supply	Provides at least 6 units hot-swappable, 80 Plus 3000W Platinum AC PSUs, with N+N redundancy
	Cooling Modules	Provides at least 10 units redundant hot-swappable fan module
	Standard Media	DVD-RW or better - accessible from each server
	Software	<ol style="list-style-type: none"> Provides redundant hot-swappable management modules. Users can access, manage, and diagnose faults for hardware devices in the blade server architecture locally or remotely using the virtual media and remote KVM. Provides a built-in touch LCD and LCD function description document for users to configure and maintain basic parameters
	I/O Ports	At least support 4 units switch module At least provide redundant 10GE and FC switch modules, and each switch module provides at least 16 x 10GE and 8 x 8G FC ports, with 4 unit 10GE SFP+ transceivers, 4 unit 8G FC transceivers

2	Cabinet Rack	
	Category	Branded and brand new
	Rack Size	Cabinet (W x D x H) should be at least 800 mm x 1100 mm x 2000 mm
	Height	

	Color	Black or dark color
	Integrated Features	<ul style="list-style-type: none"> a. Converged cabinet with Power Distribution Unit (PDU) b. Integrated rack mount 17" (or higher) flat panel (LCD) monitor console kit c. Integrated keyboard video monitor and mouse (KVM) switch and Rack accessories/tools d. Front door should be single-swing door and Rear door should be double-swing door e. Protection level should be IP20 f. Supports both top and bottom cable routing. <p>Note: One rack shall have smoke sensor, temperature and humidity module, water detector</p>

1	UPS	
	Category	Branded and brand new
	Output Power Capacity	10KVA
	Input Voltage	110V-240V
	Output Voltage	220V AC
	Typical Recharge Time	6 hours or better
	Typical Backup at Full Load	Battery power backup time should be at least 15 minutes UPS output power factor should be at least 0.9 UPS efficiency should be at least 94.5%
	Interface Ports	SNMP, RS-485, USB or better
	Form Factor	Rack-mount

1	Storage Area Network (Production)	
	Category	Branded, brand new, and compatible with the blade server
	Raid Controller	Must provide two controllers which is active-active and integrate SAN and NAS functions without additional gateway
	Cache size per Controller	256GB cache or higher
	Raid Level	0, 1, 3, 5, 6, 10, 50 or better

	Hard Disk	At least 10 disks to hold at least 20T SSD usable capacity. At least 30 disks to hold at least 42T SAS usable capacity Maximum number of supported disk slots should be at least 700
	Disk Drive Interface	Provide at least 8 x 8 G Fibre Channel (5meters) Able to support iSCSI, FCoE, FC ports and/or InfiniBand
	Transceivers	Provide 12 Gbit/s SAS 3.0 back-end disk channel. SW Small Form Factor Pluggable (SFP) for SAN connection (at least 4 pcs)
	Fiber Cables	Five (5) meters Fiber Channel Cables, at least eight (8) pcs to connect the Integrated SAN switch to the SAN disk storage
	Form Factor	Rack mountable
	Software	Graphical management software with comprehensive functions. Storage array and volume management software are included.

1	Storage Area Network (Backup Storage)	
	Category	Branded, brand new, and compatible with the blade server
	Raid Controller	Must provide two controllers which is active-active and integrate SAN and NAS functions without additional gateway
	Cache size per Controller	256GB cache or higher
	Raid Level	0, 1, 3, 5, 6, 10, 50 or better
	Hard Disk	Provide at least 20 disks to hold at least 100T NL SAS usable capacity Maximum number of supported disk slots should be at least 700
	Disk Drive Interface	Provide at least 8 x 8 G Fibre channel (5meters) Able to support iSCSI, FCoE, FC ports and/or InfiniBand
	Transceivers	Provide 12 Gbit/s SAS 3.0 back-end disk channel. SW Small Form Factor Pluggable (SFP) for SAN connection (at least 4 pcs)

	Fiber Cables	Five (5) meters Fiber Channel Cables, at least eight (8) pcs to connect the Integrated SAN switch to the SAN disk storage
	Form Factor	Rack mountable
	Software	Graphical management software with comprehensive functions. Storage array and volume management software are included.

2	SAN Switch	Must be integrated to SAN Support up to 24 x 8G FC ports 12 x 8G ports enable with transceivers 12 x 10m patch cord Dual power module
----------	-------------------	---

2	Firewall (NGFW)	
	Category	Next Generation Firewall
	Form Factor	Rack-mountable
	Firewall throughput	IPv4 Firewall Throughput of 20 Gbps
	VPN Throughput	IPsec VPN Throughput 15 Gbps
	Concurrent connections	8,000,000 minimum
	Interface ports	8 x GE (RJ45) and 2 x 10 GE (SFP+) Ports 8 x GE (SFP) Ports 2 x USB Ports
	Software	Management Software with Load Balancer
	Security Features	Stateful Packet Inspection Firewall Web Content Filtering Block TCP/UDP packet floods DoS attack protection Port/Service blocking Hardware DMZ port other latest firewall security features
	VPN Features	Supports multiple highly reliable VPN features, such as IPsec VPN, SSL VPN, L2TP VPN, DSVPN and GRE.
	Encryption	DES, Triple DES, AES or better
	Authentication	Latest Standard

	Other Features	<ul style="list-style-type: none"> a. Maximum number of interfaces ≥ 60 x GE interfaces + 12 x 10GE interfaces. b. Supports hardware electrical bypass cards (with the bypass card configuration screenshots provided) c. No less than 6000 application protocols can be identified. d. Supports the conversion of port-based security policies to application-based security policies; supports analysis of policy risks and redundant policies; provides security policy tuning suggestions. e. Supports data leak prevention to identify and filter files and content (different types of information, such as ID cards, credit cards, debit cards, and social security cards) in transit f. Can access a URL category database of over 120 million URLs to manage access by URL category, such as blocking malicious URLs and accelerating access to specified categories (optional)
	Input Power	AC 120/230 V
	Accessories	Power Cord Drivers and manuals

2	Network Switch	
	Category	Branded and brand new Top-of-Rack (TOR) Switch
	Form Type	Rack-mountable
	Standard	IEEE 802.1ad (Q-in-Q) standard
	Protocol Support	IPv4 and IPv6 support or better
	Number of Ports	Support 24-port 10GE SFP+ and 2-port 40GE QSFP+
	Management Features	Web-based and/or Client-based
	Other Features	<ul style="list-style-type: none"> a. Support switching capacity of 640Gbps. b. Must provide at least 8 unit 0.3km SFP+ transceivers c. Support a buffer size of larger than or equal to 9M d. Support strict front-to-rear ventilation channel. e. Support Max 64K MAC address tables. Indicate if the "VLAN Mapping" feature is supported. f. Support MUX VLAN or equivalent g. Support STP/RSTP/MSTP. h. It must support 64 MSTP instances. i. Support VLANIFSupport Max 1.5K FIB. j. Support Max ARP 1.5K. k. Support static routing.

		l. Support OSPFv2.Support BGP. m. Support first-hop redundancy via VRRP.
	Power requirements	110- to 240-Volts (Auto Volt)
	Accessories	Software Driver and Manual Power Cable Fiber Patch Cord (optional)

1	LAN Cabling	
	Protocol	a. Ethernet Protocol (802.3 family) b. 10Mbps - 10Base-T Ethernet (IEEE 802.3) c. 100 Mbps - 100/1000 Base-TX Fast Ethernet (IEEE802.3u) d. 1000 Mbps -10/100/1000 Base-T/TX Gigabit Ethernet (IEEE802.3z) e. 10-Gigabit -10GBase-R Ethernet (IEEE802.3ae) f. Or latest Network Cabling
	Standard Cable Type	a. Cat6 for 10mbps- Base-T(802.3) or for 100 Mbps – Fast Ethernet (802.3u) b. Cat 6 for Gigabit Ethernet (802.3z) c. Optical Fiber Optics for 10-Gigabit -10GBase-R (802.3ae) d. Cat 6e or latest for 10 Gigabit -10Base-R (802.3ae) e. or Latest technology cabling for compatible protocol
	Cabling Service Requirements	Cabling layout design Cabling labeling

B. Trainings

Product User's Training for at least 15 personnel is required.

C. Warranty and Guarantee Requirements

Quality assurance is expected from the SUPPLIER, such that any error or fault in any hardware, peripherals, pre-installed mandatory software and installation tools delivered during the implementation shall be acted upon, resolved, mitigated and/or replaced accordingly at no cost to the organization. Likewise, upon final project acceptance, the SUPPLIER is required to after sales service and assurance that all equipment and installation are accurate, complete, operable, uncompromised, and error-free during warranty period.

D. Warranty coverage:

All IT Equipment must be covered with warranty of at least three (3) years on parts and services.

V. APPROVED BUDGET

The Philippine National Police – Information Technology Management Service (PNP ITMS), through General Appropriations Acts (GAA) FY 2018, intends to apply the Approved Budget for the Contract (ABC) of Thirty Million Pesos (Php30,000,000.00).

VI. REFERENCES

ITEM	NAPOLCOM SPECIFICATION NO.
Enterprise Server	RESOLUTION NO. 2016-648 (21-JUL-2016) ON THE MINIMUM STANDARD SPECIFICATIONS FOR THE ENTERPRISE SERVER OR BETTER
Firewall	RESOLUTION NO. 2012-256 (09-JUL-2012) APPROVING THE MINIMUM STANDARD IN THE SPECIFICATIONS OF UNIFIED THREAT MANAGEMENT (UTM)/ FIREWALL or BETTER
Network Switch	RESOLUTION NO. 2013-320 (22-MAY-2013) APPROVING THE MINIMUM STANDARD IN THE SPECIFICATION FOR NETWORK SWITCH OR BETTER
Storage Area Network (SAN)	RESOLUTION NO. 2009-709 (28-DEC-2009) PRESCRIBING THE STANDARD SPECIFICATIONS FOR PNP DATA WAREHOUSE (ON STORAGE AREA NETWORK) OR BETTER
LAN Cabling	RESOLUTION NO. 2009-699 (28-DEC-2009) APPROVING THE STANDARD SPECIFICATIONS FOR LOCAL AREA NETWORK (LAN) CABLING OR BETTER
Rack mountable Uninterruptable Power Supply (UPS)	RESOLUTION NO. 2009-709 (28-DEC-2009) PRESCRIBING THE STANDARD SPECIFICATIONS FOR PNP DATA WAREHOUSE (ON RACK MOUNTABLE UPS) OR BETTER