



TERMS OF REFERENCE

Supply, installation and configuration of Server and HPC Storage Expansion for the Fiji Meteorological Service.

1. Background of the Climate Risk Early Warning System (CREWS) Pacific Small Island Developing States (SIDS) Project

The Climate Risk and Early Warning Systems (CREWS) Initiative aims to significantly increase the capacity of Least Developed Countries (LDCs) and Small Island Developing States (SIDS) to generate and communicate effective, impact-based, multi-hazard and gender-informed early warnings and risk information within strengthened national multi-hazard early warning systems (MHEWS). The CREWS Initiative is a partnership between the World Meteorological Organization (WMO), the World Bank Group and its Global Facility for Disaster Reduction and Recovery (GFDRR), and the United Nations Office for Disaster Risk Reduction (UNDRR). The CREWS Initiative is funded by Australia, Finland, France, Germany, Luxembourg, the Netherlands Switzerland, and the United Kingdom.

The CREWS Pacific SIDS 2.0 is the second regional CREWS project in the Pacific. The Project is funded by the CREWS Initiative and implemented by WMO, UNDRR, and WB-GFDRR. This project is an extension of the CREWS Pacific SIDS project (2017-2022) and aims to upscale its efforts in the Pacific region. CREWS Pacific SIDS 2.0 seeks to strengthen existing early warning systems that are part of the region's stronger and more comprehensive human security and resilience agenda.

The project's objective is to enhance the effectiveness and inclusiveness of Pacific Islands and Regional Early Warning systems for local and vulnerable populations. The project's outcomes are:

- 1) Improved governance – strengthen governance structures and mechanisms for regional centers and National Meteorological and Hydrological Centers (NMHSs) targeted by the project.
- 2) Enhanced product development and accessibility – Enhance regional and national facilities and capacities of regional centers and NMHSs targeted by the project to produce impact-based forecasts and risk-informed warnings of extreme and high-impact hydro-meteorological events, accessing and using global and regional data, products, and services.

- 3) Enhanced service delivery – Delivery of impact-based and risk-informed hydro-meteorological data, products, and services to targeted regional centers and NMHSs to support MHEWS stakeholders in their decision-making.
- 4) Enhanced communication and awareness programs on early warning services (EWS) - Develop and provide accessible knowledge, communications, and awareness products to encourage uptake of early warning information by end users
- 5) Improved integration of gender including people living with disabilities across the EWS chain - Develop and implement a people-focused, gender-sensitive National EWS plan and system that addresses emerging and existing multi-hazards and is adaptable to the needs of vulnerable groups including women, children, people living with disabilities, and people living in remote-outer islands.

Brief Information

The Fiji Meteorological Service (FMS) in collaboration with WMO and Indonesian Agency for Meteorological, Climatological and Geophysics (BMKG) carried out a project to setup our first Numerical Weather Prediction system using High Performance Computing. This was implemented under the CREWS project. That project was a success with FMS having access to high-resolution Numerical Weather Prediction Storage Expansion (NWP)data for Fiji and the region. The NWP data is available on our website for public access and it is also used by Forecasters to carry out analysis. The current NWP Infrastructure can only accommodate 5 months of Data. FMS would like to have at least 1 year of data for analysis and other work. The current NWP Infrastructure accommodates 25TB of data. The Expansion requested for NWP storage will need to be at least 100TB so we can archive more process data for long-term analysis and trends.

Our website is currently hosted on Shared Host in a Virtual Environment. The Shared Host is running out of resources. Since we are planning to upgrade our website we are also looking at upgrading our Web Server environment in a DR environment to ensure that we have redundancy of our web server system.

2. Objectives and Scope:

The primary objectives of this procurement are to:

- Supply and Setup Hardware Infrastructure to host Disaster Ready Web Server platform for Fiji Meteorological Service
- Supply and set up the Numerical Weather Prediction Storage (NWP) to archive at least a year of NWP data.

3. Expected Outputs

The expected outputs from this project are:

- Numerical Weather Prediction system Storage expansion extended to more than 50TB
- The Web Server Platform upgraded into DR ready system
- NWP storage expansion will ensure the archiving of NWP data for long-term analysis.

4. Deliverables and Timeline

The Supplier is responsible for the delivery, installation, and configuration of the infrastructure purchased. The Supplier is expected to:

- Supply, install and configure Numerical Weather Prediction Storage Expansion at FMS.
- Supply, install and setup Hardware Infrastructure to host Disaster Ready Web Server platform for Fiji Meteorological Service.

5. Nature of the Project

- Supply, Install, and Setup to be provided by the vendor. Please note that Lenovo engineers need to be involved to set up NWP Storage Expansion;
- The Supplier must provide 3 to 5 years warranty support and available for the hardware supplied in Fiji, 3 years will be basic and longer warranty will be an advantage;
- All quotes should be in Swiss Francs (CHF).

6. Hardware Specification

Web Server Specification	
Brand	Lenovo
Model	Lenovo ThinkAgile VX7531 Certified Node
Warranty	5 Year
Configuration Instruction	XClarity Pro, Per Endpoint w/5 Yr SW S&S
Configuration	SERVER PREMIER FOUNDATION NBD – 5 yrs

Technical Specs	ThinkAgile VX 2U 3.5" Chassis with 8 or 12 Bays
	<p>2x Intel Xeon Silver 4310 12C 120W 2.1GHz Processor</p> <p>16x ThinkSystem 16GB TruDDR4 3200 MHz (2Rx8 1.2V) RDIMM</p> <p>1x ThinkSystem 4350-16i SAS/SATA 12Gb HBA</p> <p>1x vSAN Hybrid Config</p> <p>3x ThinkSystem 3.5" PM1655 1.6TB Mixed Use SAS 24Gb HS SSD</p> <p>12x ThinkSystem 3.5" 8TB 7.2K SAS 12Gb Hot Swap 512e HDD</p> <p>1x ThinkSystem M.2 SATA 2-Bay RAID Enablement Kit</p> <p>2x ThinkSystem M.2 5400 PRO 480GB Read Intensive SATA 6Gb NHS SSD</p> <p>1x VMware ESXi 8.0 U1 (Factory Installed)</p> <p>1x ThinkSystem 2U 12x3.5" SAS/SATA Backplane</p> <p>1x ThinkSystem 1U/2U 4x3.5" SAS/SATA Backplane</p> <p>1x ThinkSystem Mellanox ConnectX-4 Lx 10/25GbE SFP28 2-port OCP Ethernet Adapter</p> <p>1x ThinkSystem Mellanox ConnectX-4 Lx 10/25GbE SFP28 2-port PCIe Ethernet Adapter</p> <p>2x ThinkSystem 2U PCIe Gen4 x16 Riser 1 or 2</p> <p>2x ThinkSystem V2 1100W (230Vac/115Vac) Platinum Hot Swap Power Supply</p> <p>2x 2.8m, 13A/100-250V, C13 to C14 Jumper Cord</p> <p>1x ThinkSystem XClarity Controller Standard to Enterprise Upgrade</p> <p>1x XClarity Pro, Per Endpoint w/5 Yr SW S&S</p> <p>1x Lenovo XClarity Pro, Per Managed Endpoint w/5 Yr SW S&S</p> <p>2x VMware vSphere 8 Standard for 1 processor w/Lenovo 5Yr S&S</p> <p>2x VMware vSAN 8 Standard for 1 processor w/Lenovo 5Yr S&S</p>

High-Performance Computing Expansion	
Brand	Lenovo
Model	ThinkSystem DE 240S 2U24 SFF Expansion Enclosure
Technical Specs	Lenovo ThinkSystem Storage Series 2U24 Chassis
	Configured with DE2000H Controller
	ThinkSystem DE Series Expansion IOM
	24 x Lenovo ThinkSystem DE Series 1.6TB SSD 2.5" SSD
	0.5m External MiniSAS HD 8644/MiniSAS HD 8644 Cable
	1.5m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable
	Lenovo ThinkSystem Storage Rack Mount Kit 2U24
	Lenovo ThinkSystem DE Series Ship Kit (RoW) 2U, Gen2
	Lenovo ThinkSystem Storage Packaging 2U
	Lenovo ThinkSystem DE Series DE240S Product Label
	Lenovo ThinkSystem DE Series 2U24 End Cap Kit (Pair)
	2U24 Expansion System Labels
	DE STORAGE PREMIER Foundation – 5 yrs
Note: Lenovo-branded products are requested to ensure compatibility with existing equipment at FMS.	
Lenovo Engineers also need to be involved to re-configure the current storage with the new expansion without disrupting the NWP operations	

7. Sustainable Considerations

WMO plays an important role in promoting the Sustainable Development Goals (SDGs) – the 17 interlinked urgent calls to action to all countries in a global partnership to deliver UN’s 2030 Agenda for Sustainable Development.

WMO is committed to include sustainability considerations in all procurement related activities as well as in both new and ongoing contracts, and to promote sustainable business practices. To this end, the Supplier is required to comply with the following requirements:

- a) Have a corporate environmental policy
- b) Demonstrate its commitment to support gender equality and women's empowerment through its operations, for example:
 - The organization's current or future plans/activities regarding gender diversity in the recruitment process
 - Ensuring equal pay between men and women
 - Opportunities for females to be empowered and promoted internally
 - Prevention of sexual exploitation, abuse, violence, harassment or any form of discrimination at work
 - Paid parental leave policies for men and women
 - Professional safety training and access to equal protection facilities for all staffs without discrimination
 - Include at least a female service team member among its key personnel
- c) Have an internal policy regarding the sustainability and monitoring of their supply chains.

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