The University of the South Pacific
Network Automation - Future WAN Services

PACNOG 30 - Online

Welcome

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IT Services

Agenda

- General Overview
- Data Consistency
- WAN Works

General Overview

Past Plans

PACNOG28 - 2021

- Office 365
  - Exchange Service
  - Office Apps
- VMWare Virtual Services
  - Virtual Desktop Infrastructure
  - VMWare Application Containers: https://vapps.usp.ac.fj
- Others
  - Complete RPKI (Concluded 2021)
  - Routing Upgrade (SDWAN Ready)
  - Cloud Services (Security & Service Availability)
  - Automate processes & ease operations
  - Improving Security Community

Considerations

- Cloud Services
  - Office 365
    - Exchange
    - SharePoint
    - MS Office
  - Student GMAIL
  - Engineering Services
- WAN Connectivity
  - Fiber
  - Satellite

- Green & Investment
  - Power Usage
  - Footprint
  - Reduce CAPEX & OPEX
- Manpower
  - Reduce Overhead
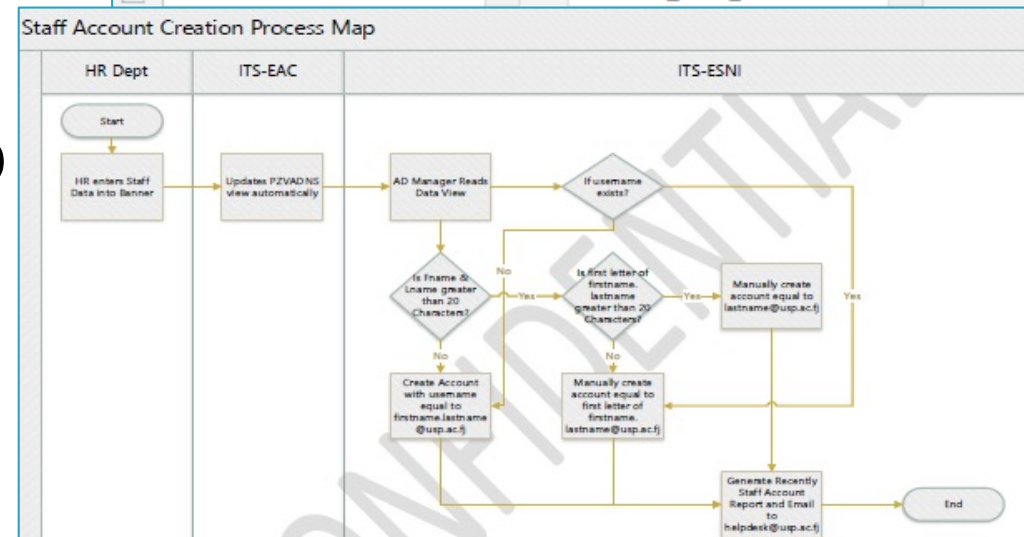 - Reduce Mistakes
- Wireless
  - IPv6
  - ISP Equivalent

Data Consistency

Getting our data right

Process Automation - Preps

- **Username & Emails**
  - Completed July 2022
  - firstname.lastname@usp.ac.fj
  - Licensing

- **Data Integration**
  - Banner ERP
  - Banner SQL Views

- **Active Directory / Azure AD**
  - Central SSO Logins
  - Central Point for User Information
  - Middle Tier

Process Automation - Data

- **Automated**
  - 2 Hours Provisioning
  - AD Data Sync
  - Automated Deactivation
- **Group Based Provisioning**
  - Unified Communications
  - Printing Services
  - Cloud Services via SSO
  - Group Emails
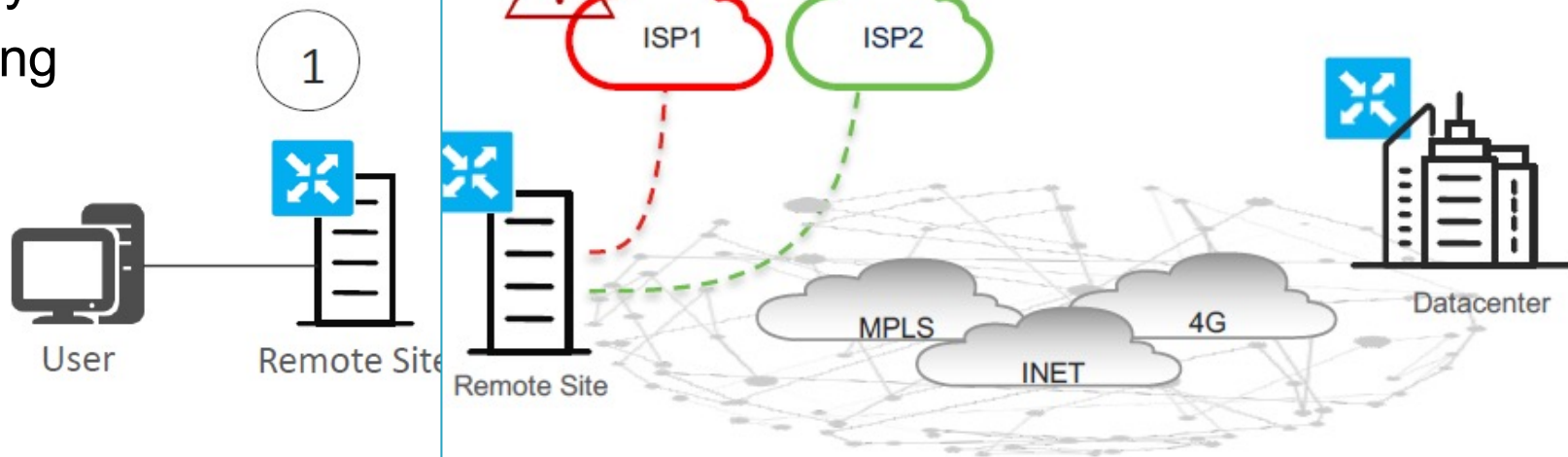 - Country Based Grouping
  - TACACS+
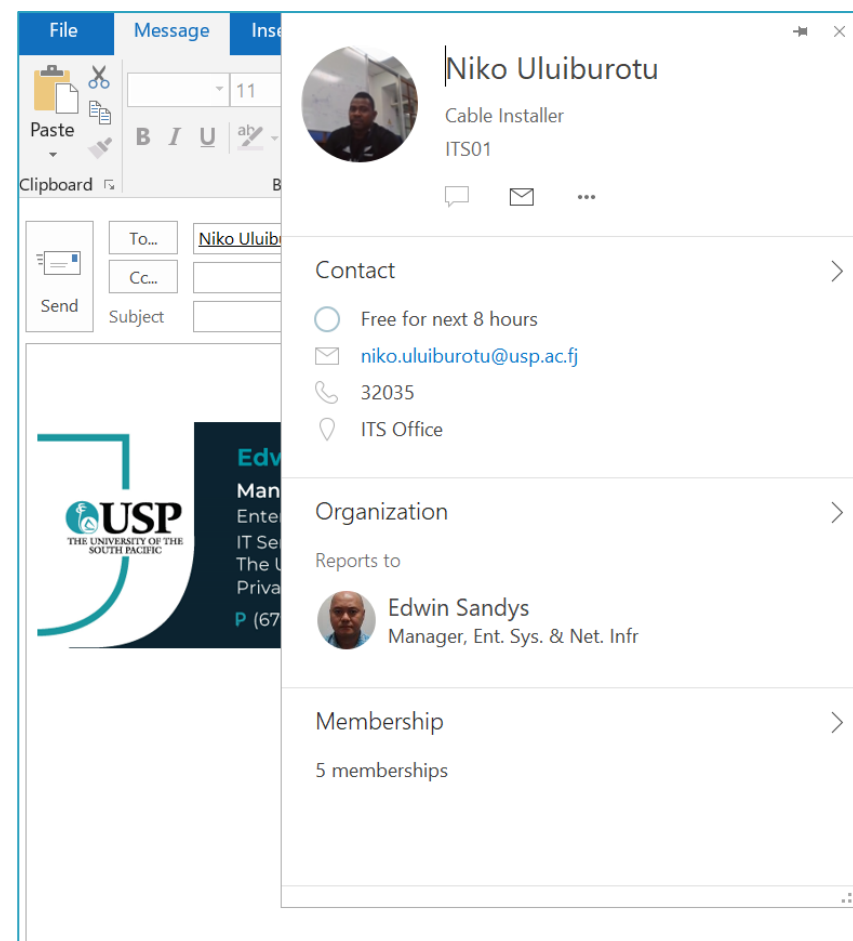
WAN Works

Services in Regional Sites

Current WAN Look!

- Lean Operations
- Easy Deployment
- Localise Services
- Small vs Medium vs Big Sites
- Server Rooms – Yay or Nay!?
- Routing

Technical Staffing

- **Reclassification**
  - Cabling Staff
  - Infrastructure Staff
    - Satellite
    - Fiber
    - Wireless
- **Training**
  - Satellite
  - Access Services
  - WAN Services
  - Core Operations

- **Engineering**
  - Automated Equipment Updates
  - Remove time consuming tasks
- **Operational Procedures**
  - SOP
  - Guidelines
  - As Build Designs

Quick Installs – Outreach Commons

- **Backpack Ready**
- **CAPEX**
  - $45k Normal
  - $19k Revised
- **Secured**
  - VPN
  - Controlled
- **Plug & Play**
  - Easy Access
  - Ship & Install
- **6 Sites Deployed**
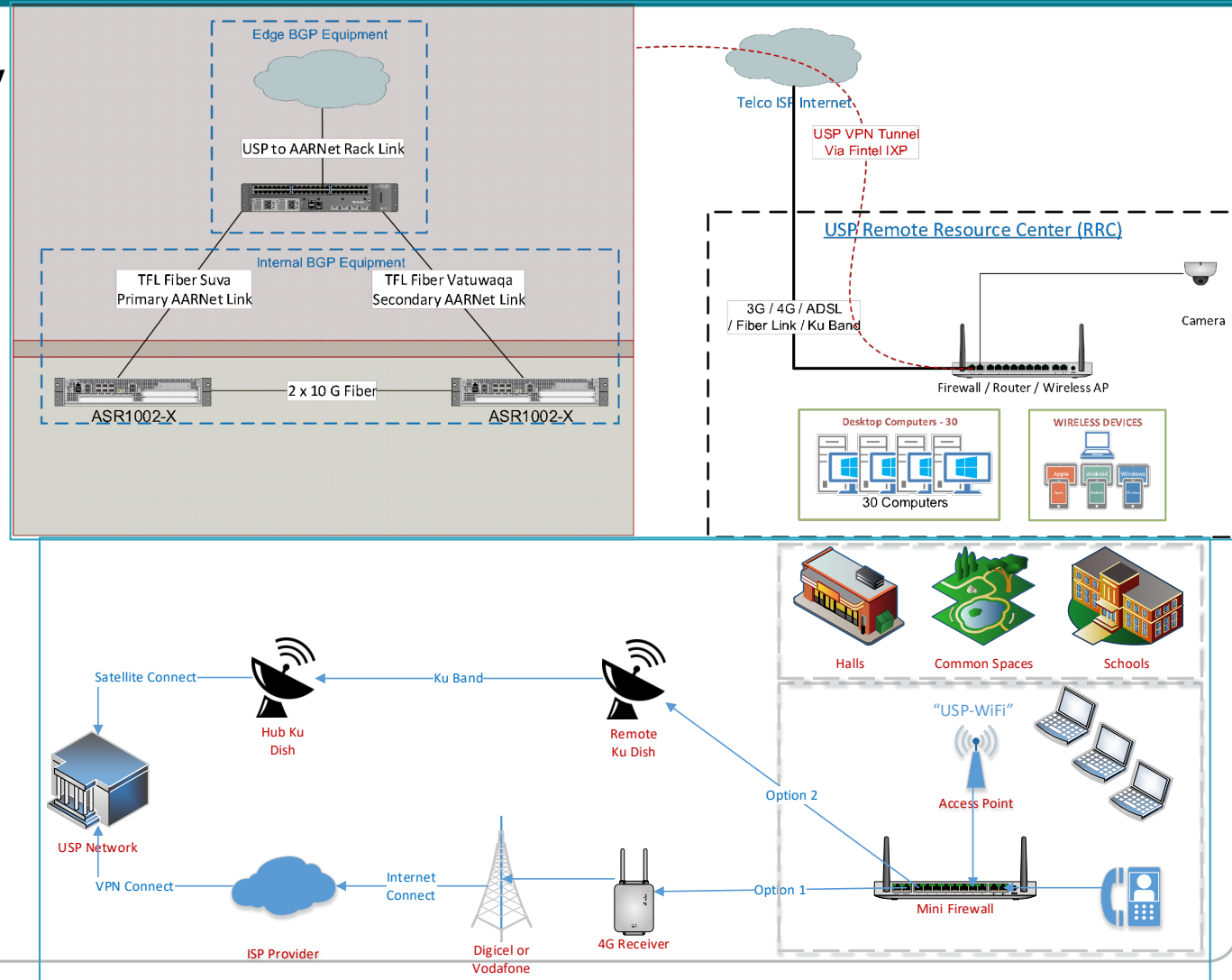
Fiji Sites Complete
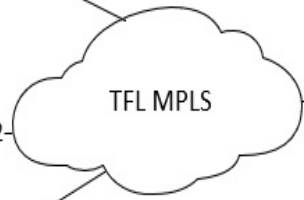
Device Stats & Updates

Router FJ-LTK-Core.usp.ac.fj

⌄ Application Experience   As of Aug 8, 2022 9:06 AM   ⟳ Refresh

| | | | All VRFs ⌄ | All Interfaces ⌄ |

Business Relevant   Business Irrelevant   Default

Application (23)   ↑ Export   ⚙

▽ Filter

	Name			Jitter	
				ax	Average
○	ms-rpc			--	--
○	active-direct			--	--
○	webex-meeti			--	--
○	ldap			--	--
○	kerberos			--	--

✅ Startup vs Running Configuration   ⓘ

Compliance last run on: Aug 3rd, 2022, 04:32:01 PM

6 days   Lines added: **0**
since in sync   Lines removed: **0**
          Lines modified: **0**

❌ Software Image   ⓘ

Non-Compliant since Jul 31st, 2022, 03:38:19 PM

Compliance last run on: Aug 3rd, 2022, 04:32:01 PM

17.06.03a   Running Version: **17.3.5**
Golden Image Version

✅ Critical Security Advisories   ⓘ

Compliant since Jul 30th, 2022, 12:01:13 PM

Compliance last run on: Aug 6th, 2022, 12:03:46 PM

0

Device Updates & Templates

Provision > **Inventory** > Image Upgrade Status

✓ All | Routers | Switches and Hubs | Wireless Controllers | Access Points | Sensors

Devices Updates

As of: Aug

🔍 Search Table

Site to Site VPN

Establish a Site to Site VPN connection between different managed sites using the VPN workflow.
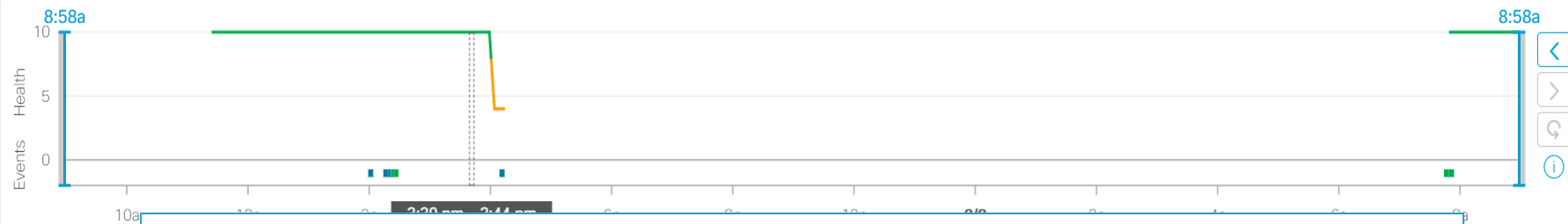
● ● ● ● ● ●

Let's Do it

Monitoring

What's Next?

- Push IPv6 Regionally
  - Wireless
  - Randomised MAC
- Link multiple pathways
  - Satellite
  - Fiber
- Wireless Infrastructure
  - Reduce Cabling
- SDWAN???

Thank You & Questions

Bridging the Pacific

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