NASSCOM®

11th Defence Information Technology Consultative Committee (DITCC) Meeting

23rd November 2016

- Support for not only AMD and Intel Processors, but also GPU(s) which in future will be needed for analyzing huge chunks of data.

- Recommend leveraging BOSS (Bharat Operating System) and enhancing the same for Indian Army needs. BOSS is an Indian GNU/Linux distribution developed by CDAC and is customized to suit Indian's digital environment.

- Recommend building an Operating System for Native Mobile Application.

- Emphasis must be also on – Cloud Operating Systems and Virtualization/Hypervisor technology on top of the Operating System.

- Cloud Focus is key - It can leverage OpenStack. OpenStack is open source platform for creating and managing large groups of virtual private servers in a cloud computing environment.
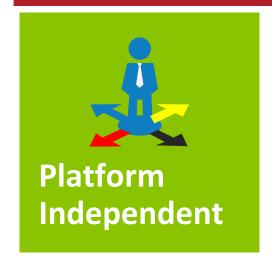
Industry Views on Indigenous OS

Agility

Platform Independent

"Simple to deploy, maintain and upgrade"

"Should be platform independent and cloud adoptable with self healing capabilities"

"Should track all applications and provide insight to application performances "
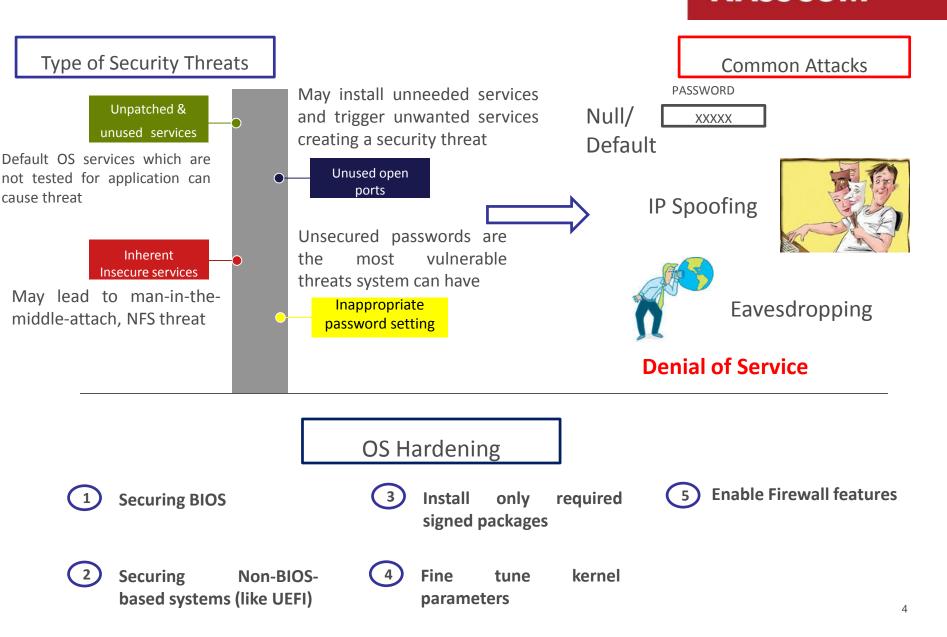
Ease Portability

Security

"Should be capable enough to enable easy portability of apps across environments"

"Should be secured enough to shell its environment from possible threats "
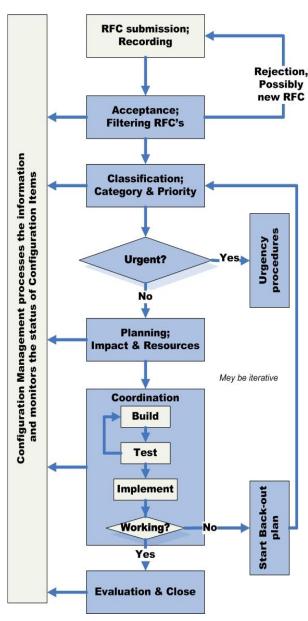
Views on OS Security Threats & Hardening

Type of Security Threats

Common Attacks

Unpatched & unused services

May install unneeded services and trigger unwanted services creating a security threat

PASSWORD

Null/ Default

XXXXX

Default OS services which are not tested for application can cause threat

Unused open ports

IP Spoofing

Inherent Insecure services

Unsecured passwords are the most vulnerable threats system can have

May lead to man-in-the-middle-attach, NFS threat

Inappropriate password setting

Eavesdropping

Denial of Service

OS Hardening

1. **Securing BIOS**

2. **Securing Non-BIOS-based systems (like UEFI)**

3. **Install only required signed packages**

4. **Fine tune kernel parameters**

5. **Enable Firewall features**

4

ITIL Change Management

Change Management consists of:
- raising and recording changes
- assessing the impact, cost, benefits and risks of changes
- developing the business justification and obtaining approval
- management and co-ordination of change implementation
- monitoring and reporting on the implementation
- closing and reviewing change requests

Change Management is responsible for managing change processes for:
- hardware
- communications equipment and software
- system software
- "live" application software
- all documentation and procedures associated with the running, support and maintenance of live systems

Views on Indigenous GIS Software

- The GIS software can be grouped into Desktop based, Web based and mobile based and should be customizable to meet the requirements.

- The focus also should be on Open Spatial database as well, like Postgres.

- The GIS Software should be able to import from/export to the popular GIS data formats of the industry without any third part proprietary ETL software.

- The GIS software should have the Image Processing functionalities also.

- The software should be compatible with the multiple Operating Systems being planned.

Views on Indigenous Database

- Focus must not only be RDBMS- but also include Graph Databases, Columnar Databases, Document Oriented Databases, OLAP , RDF (Resource Descriptor Framework) , Key-Value and Time-Series Databases.

- Recommend leveraging Apache tools as the starting point than developing grounds up.

- In-Memory Databases must be in the scheme of things- Hadoop and Spark Environments must be kept in mind.

- Must be supported on various popular operating systems in order to ensure backward compatibility.

- Horizontal and Vertical Scalability is key. Comprehensive Tools for Management, Monitoring and Administration is key.

- Columnar Security and Transparent Encryption needs also to be given emphasis.

- Disaster Recovery Mechanisms can be built into the solution.