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PRESENTATION ON

THE PROJECT:

"A less attack-prone, Internet deployment of iLanga"

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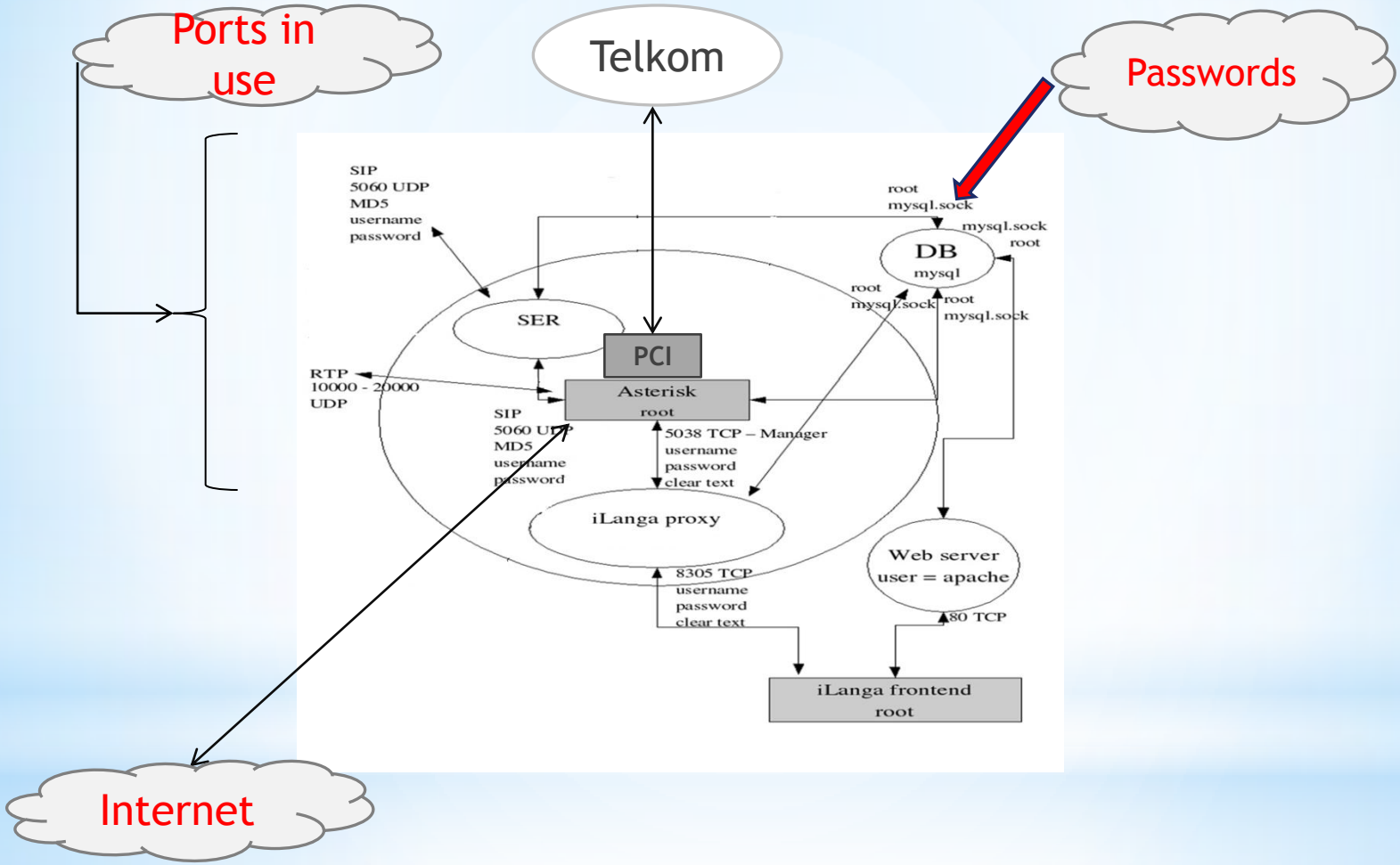
Introduction

- iLanga is an open, computer based telecommunication system that was put together at Rhodes University Computer Science Department.
- Provide services such as voice and video calling, call forwarding, voicemail etc. for free or at affordable cost.
- At the moment iLanga is not fully functional due to security reasons.
- Security is important to ensure confidentiality, availability and integrity.

iLanga architecture



Identified vulnerabilities

1) Passwords for SIP entities

- weak in length i.e four characters
- Default passwords e.g 30004672
- Plain text passwords

2) SIP authentication requests accepted from all IP addresses

3) Potential for brute force attack due to authentication responses generated for valid and invalid subscribers.

Countermeasures

1) Strong and Encrypted Passwords.

- Passwords with at least 12 alpha numeric characters.
- Customise passwords.
- Encrypting passwords

```
mysql> INSERT INTO user_md5 VALUES ('member1',MD5('secretpassword‘));
mysql> SELECT * FROM user_md5 WHERE user_name='member1' AND
password=MD5('secretpassword');
+-----------+----------------------------------+
| user_name | password                         |
+-----------+----------------------------------+
| member1   | 2034f6e32958647fdff75d265b455ebf |
+-----------+----------------------------------+
```

2) Firewall rules

```
# SIP on UDP port 5060. Other SIP servers may need TCP port 5060 as well
iptables -A INPUT -p udp -m udp --dport 5060 -j ACCEPT
```

3) Configuring sip.conf file to give similar responses for valid and invalid subscribers on authentication

Conclusion

- We cannot patch all vulnerabilities but every countermeasure contributes to the security and stability of iLanga.
- Once iLanga is secure and stable, its subscribers will be able to rely on its services.

END