

MVP: Automated Deployment and Configuration of Secure WireGuard VPN Servers

Core Components:

- **SaltStack:**
Deploy and configure WireGuard servers across multiple nodes.
- **PowerShell:**
Provision WireGuard users in bulk from a .csv or .psd1 file and generate client configuration files.

Features Ideas

1. Active Directory Integration

- Leverage Active Directory to manage WireGuard users and access dynamically using **PowerShell**:
 - Provision users based on AD group memberships. (**PS -> AD module**)
 - Assign roles and permissions tied to specific servers or subnets. (**PS -> AD module**)

2. Upstream DNS Integration

- Automate the configuration of upstream DNS resolvers for WireGuard clients using **PowerShell**.

3. Security Enhancements:

- Automatically configure WireGuard with DNSSEC and other security settings (**PowerShell**).
- Deploy local Unbound DNS resolvers for secure name resolution and integrate them with WireGuard clients (**SaltStack + PowerShell**).

4. Automated key rotation and management

- Schedule & automate periodic rotation of WireGuard keys (server and clients). (**PS/saltStack**)
- Update all relevant configuration files for clients and servers dynamically. (**PS/saltStack**)
- Notify affected users with updated keys through email or file transfer. (**Powershell**)

5. Connection Health Monitoring Reporting

- Monitor active session and Log connection details (**PS/SaltStack**)
- Generates report on session activity -> csv (**Powershell**)
- Alert on specific conditions (**Powershell**)

6. Dynamic Scaling

- Use SaltStack with cloud integration to deploy additional WireGuard servers dynamically in response to increased demand. (**saltstack**)