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Testing and Integration Process

Stage 1. Preparing Servers and Virtual Machines

Responsibilities of the telecom operator or partner preparing the equipment for delivery:

1. Prepare a server or VM according to the requirements:
    - Requirements for SSG (DPI, BRAS, NAT). If using a VM for SSG, follow the setup instructions
    - Requirements for GUI
    - Requirements for QoE
      QoE must not be installed on the SSG server.
      GUI may be installed on the SSG server only for testing purposes. For production, GUI must be deployed on a separate server or VM.
      GUI and QoE may be installed on the same server; in this case, hardware requirements are cumulative.
2. Install the VEOS operating system. Be sure to configure the Firewall for access restriction and use strong passwords.
3. Ensure network connectivity between the designated servers or VMs.
4. Provide SSH access (port 22) to each server over the internet or via WireGuard VPN. GUI additionally requires HTTPS access (port 443). Each server must have internet access to install software. Check connectivity using the command:

```
ping vasexperts.com
```

   Two access options are available:

   1. Provide login and password for SSH access.
   2. Use the ready-made script to add servers to Teleport. The script is available upon request via your account manager.

Responsibilities of VAS Experts:

1. Connect to the servers via SSH.
2. Add servers to Teleport for further support.

Stage 2. Component Installation

Installation depends on the required functionality.

Responsibilities of VAS Experts:

1. SSG (BRAS, NAT, DPI): Install SSG software on the server or VM
2. GUI (recommended): Install GUI (DPIUI2) on a separate server or VM. Add all components and verify accessibility.
3. QoE (recommended for DPI functionality): Install QoE on a separate server or VM. Configure storage for DPI statistics

4. Set up interaction between the modules (DPI, GUI, QoE)

Self-installation options for the telecom operator/partner:

1. SSG (BRAS, NAT, DPI): Installation of SSG with a script
2. GUI (recommended): Installation
3. QoE (recommended for DPI functionality): Installation
4. Set up interaction between the modules (DPI, GUI, QoE)

Stage 3. Component Configuration

Configuration depends on the required functionality.

Responsibilities of the telecom operator/partner: Fill out the questionnaire provided by the VAS Experts manager

For NAT:

1. Provide a pool of public and private IP addresses
2. Provide the receiver's IP address for NAT flow export (if a third-party solution is used)

For BRAS:

1. Configure the RADIUS server using the provided attribute dictionary
2. Provide information about the BRAS type (L2 or L3) and the authentication method
3. Configure billing responses to match the implementation scenarios

Responsibilities of VAS Experts:

For DPI:

1. Configure statistics export from DPI to QoE (Full Flow, ClickStream, DNS Flow, NAT Flow, GTP Flow)
2. Provide an account for VAS Cloud access to create custom signatures
3. Provide an extended QoE version for full statistics access

For NAT:

1. Create a NAT service and assign it to private IP addresses according to the scenario: CGNAT. Network Address Translation for IPv4
2. Configure NAT Flow export. Two options are available:
    1. To a client-side receiver
    2. Use the QoE solution from VAS Experts with NAT Flow functionality. Example scenario: Working with NAT Flow. How to find a subscriber after NAT

For BRAS:

1. Configure SSG based on the BRAS type (L2 or L3)
2. Collaborate with the client to configure the necessary RADIUS response attributes
3. Perform debugging and testing of business scenarios (e.g., financial blocking with redirect to Captive Portal, plan changes, scheduled plans)

Stage 4. Integration and Testing

Responsibilities of the telecom operator/partner:

1. Prepare a portion of traffic or a list of test subscribers for verification

Responsibilities of VAS Experts:

1. Integrate SSG with real traffic or subscribers
2. Test system operability
3. Fix identified issues, if any

Stage 5. Transition to Production

Responsibilities of the telecom operator/partner:

1. Confirm that the system is functioning as required

Responsibilities of VAS Experts:

1. Complete setup and hand over the system for production
2. Provide support during the rollout phase