Architecture

The GATE platform shares Zequenze's robust framework architecture, providing a scalable and reliable foundation for portal management and authentication services.

Core Components

The GATE architecture consists of three primary layers:

Machine Interfaces

- **RADIUS**: Remote Authentication Dial-In User Service protocol support
- **DIAMETER**: Next-generation AAA protocol implementation
- **Web Server**: HTTP/HTTPS interface for web-based interactions

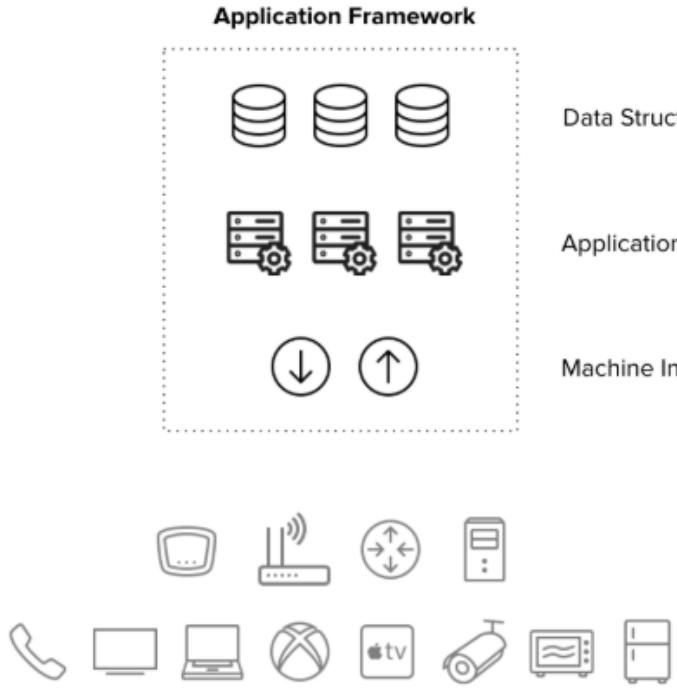
Application Layer

- **AAA Server**: Authentication, Authorization, and Accounting services
- **Captive Portal**: User authentication and access control interface
- **Ad Server**: Advertising content management and delivery
- Additional service applications

Database Layer

- **User Records Database**: Storage for user accounts and profiles
- **Transaction Records Database**: Logging of authentication and access events
- **Metrics Database**: Performance and usage analytics storage
- Additional specialized databases for various operational data

Architecture Diagram



Application Framework
Data Structures/Storage
Application Logic and Processes and Automation Engines.
Machine Interfaces: RADIUS, API, MQTT, TR-x69, SNMP, CLI, others.
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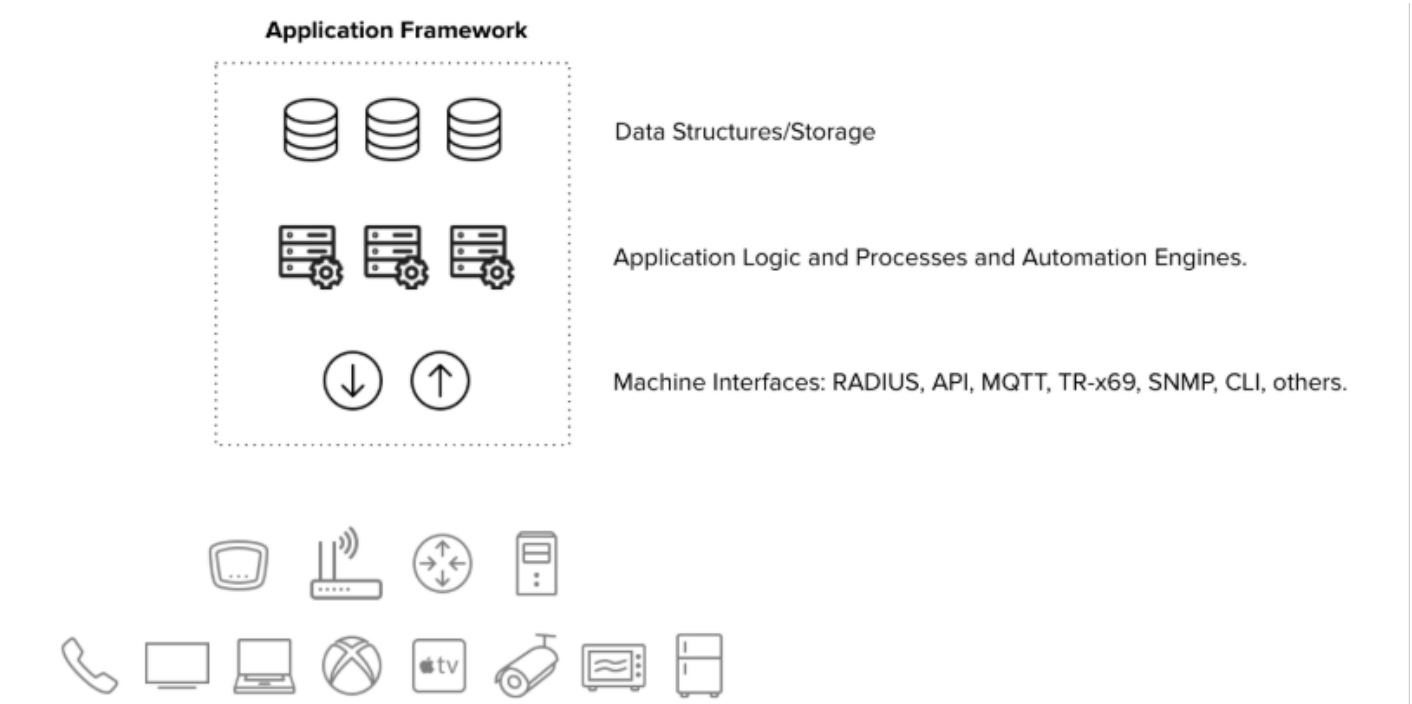

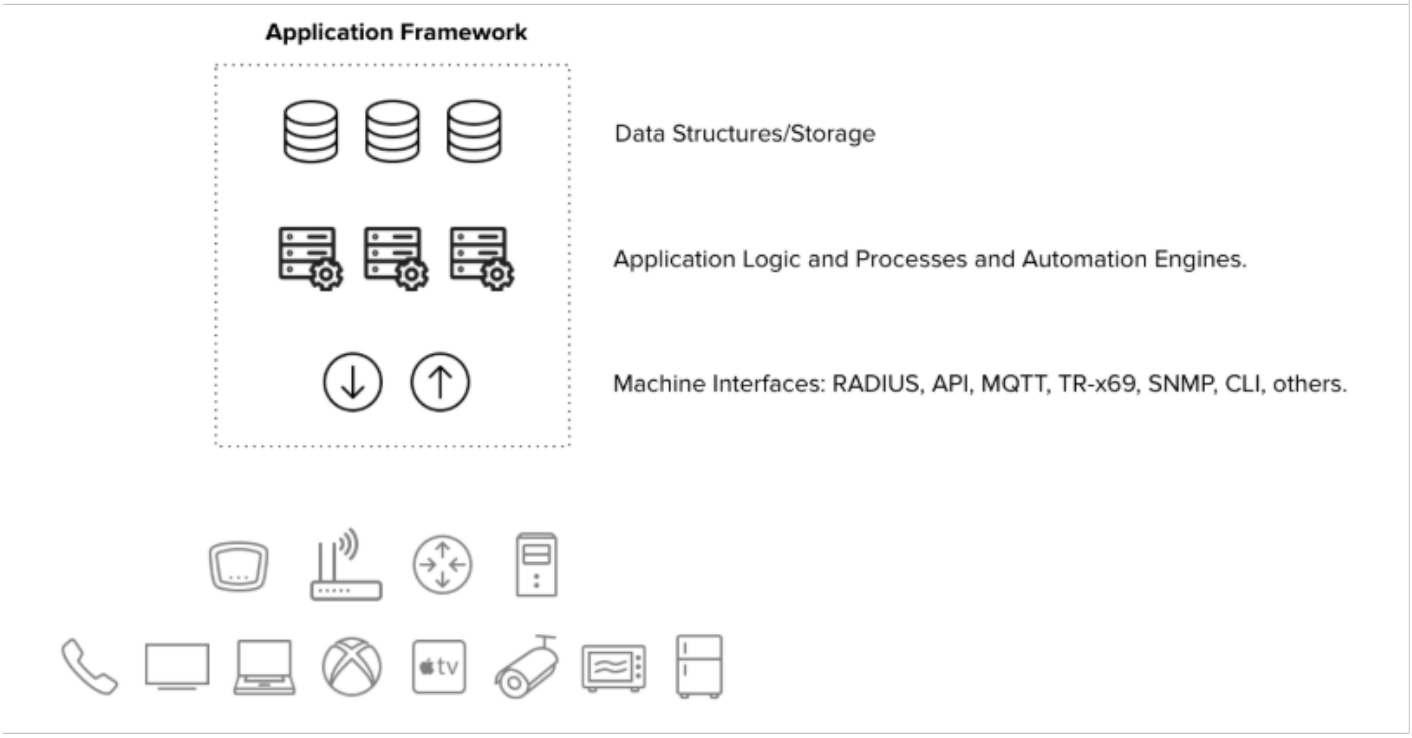

Scalability

Each architectural layer supports horizontal scaling to accommodate varying operational requirements and can be easily scaled depending on specific needs:

- **Traffic-based scaling**: Scale components based on network traffic volume
- **Activity-based scaling**: Adjust resources according to user activity levels
- **Size-based scaling**: Expand capacity based on database size and storage requirements

This flexible architecture ensures optimal performance across different deployment scenarios and growth patterns.

Further Reading

- Overview
- Specifications

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