# On-Premises Traffic Manager

**Project Overview**

The On-Premises Traffic Manager is designed to provide location-based redirection for users accessing online services, using IP geolocation data to direct users to the appropriate regional server.

**Key Features**

* **Geolocation-Based Redirection**: Utilizes MaxMind’s GeoLite2 database to identify user locations based on IP addresses and redirect them to country-specific servers.

<https://dev.maxmind.com/geoip/geolite2-free-geolocation-data>

* **Localization Support**: Enhances user experience by presenting localized content based on geographical location.

**Code Structure**

* **Startup.cs**: Configures the application, including middleware for routing and handling incoming requests.
* **IP Geolocation Logic**: Implements the MaxMind GeoIP2 library to determine user location from IP addresses.

**Database Structure**

* The project may use a lightweight database or configuration files to store server URLs and other related settings for redirection.

**Technical Documentation**

* **Geolocation Data**: Overview of MaxMind’s GeoLite2 databases and instructions for integration into applications.
* **API Documentation**: Endpoint for retrieving server URLs based on client IP addresses.

**System Analysis Insights**

**Technical Considerations**

* **Scalability**: Both systems should be designed to scale horizontally to handle increased transaction loads and user requests.
* **Security**: Ensure that all transactions are secure, using encryption and proper validation checks to prevent fraud.
* **Performance**: Implement caching strategies for frequently accessed data, especially for geolocation lookups and transaction statuses.

**Data Management**

* **Data Integrity**: Establish mechanisms to ensure data accuracy and consistency across transactions and reports.
* **Reporting**: Daily reports should include metrics such as transaction volume, cancellation rates, and flagged fraud attempts, enabling management to make data-driven decisions.

**Future Enhancements**

* **Enhanced Fraud Detection**: Integrate machine learning algorithms to analyze transaction patterns and improve fraud detection capabilities.
* **User Interface Improvements**: Develop a more interactive dashboard for risk management teams to review transactions and take necessary actions.



## Azure Traffic Manager vs Any DNS vs On-Premises Traffic Manager

### Azure Traffic Manager

**Azure Traffic Manager** is a DNS-based traffic load balancer that enables you to distribute traffic across multiple regions based on various routing methods, including geolocation. Here’s how it works:

* **Geographic Routing**: Traffic Manager can route users to specific endpoints based on their geographic location. This allows you to direct users to the nearest instance of your application.
* **Multi-Endpoint Support**: You can configure multiple endpoints, which can be Azure VMs, Azure Web Apps, or any publicly accessible service.
* **Health Monitoring**: Traffic Manager continuously monitors the health of your endpoints and routes traffic only to healthy ones.

**geolocation-based redirection** and high-traffic management:

Any DNS and DNS Flood is other important scalable enterprise technology related to resolve hostnames to ips menservant short distance between DNS and client machine

 **Cloudflare**: Best for small to large-scale projects with integrated security and edge capabilities.

 **AWS Route 53**: Best for users deeply integrated with AWS and requiring granular traffic control.

 **Google Cloud DNS**: Best for users on Google Cloud with global scalability needs.

 **Akamai Edge DNS**: Best for enterprises requiring robust, secure, and large-scale DNS solutions.

 **NS1**: Best for real-time, intelligent traffic management and complex routing needs.

 **Dyn Managed DNS**: Best for enterprises with specific geolocation and performance-based traffic management needs.

 **UltraDNS**: Best for enterprises with high-security requirements and complex traffic management needs.

## On-Premises Traffic Manager

Is very simple approach for small businesses and benefits are price due to everything is hosted on on-premises. Also, the code can evolve in regards of internal company requirements.