AI-IRR Azure Architecture

Internet Routing Registry Automation - Cloud Infrastructure

EXTERNAL IRR SOURCES

API — RIPE NCC
REST API - Europe/Middle East

43 — RADB / ARIN / APNIC
WHOIS Protocol - Global Coverage

43 — LACNIC / AFRINIC / NTT
WHOIS Protocol - Regional

API GATEWAY & PROXY

APIM — API Management
Rate limiting, caching, auth

FD — Front Door + WAF
Global LB, DDoS protection

NAT — NAT Gateway
Outbound WHOIS (Port 43)

COMPUTE SERVICES

CA — Container Apps
Main IRR automation service

AF — Azure Functions
Scheduled triggers (Timer)

SB — Service Bus
Async queue processing

DATA SERVICES

SQL — Azure SQL Database
Snapshots, diffs, tickets

RC — Redis Cache
IRR response caching

ST — Blob Storage
Logs, backups, exports

SECURITY & MONITORING

KV — Key Vault
Secrets & API tokens

AI — App Insights + Monitor
APM, logs, alerts

OUTPUT

TKT — AT&T Ticketing API
Create change tickets

VN Azure Virtual Network (10.0.0.0/16) - Private Connectivity

Gateway Subnet (10.0.1.0/24)

- Application Gateway
- API Management (External)
- NAT Gateway

Application Subnet (10.0.2.0/24)

- Container Apps Environment
- Azure Functions (Premium Plan)
- Private Endpoints

Data Subnet (10.0.3.0/24)

- Azure SQL (Private Link)
- Redis Cache (Private)
- Storage Account (Private)

API Endpoints & Integration Points

Service	Protocol	Endpoint	Azure Component
RIPE NCC	REST	https://rest.db.ripe.net/search.json	API Management + Redis Cache
RADB / ARIN / APNIC / LACNIC / AFRINIC / NTT	WHOIS	*.whois.net:43 / *.arin.net:43	NAT Gateway + NSG Rules
AT&T Ticketing	REST	${ABC_BASE_URL}/tickets (POST)	API Management (Outbound Backend)
Internal APIs	HTTP	/api/v1/fetch, /diff, /submit, /run	Container Apps Ingress