🏗️ Azure AI Services Infrastructure
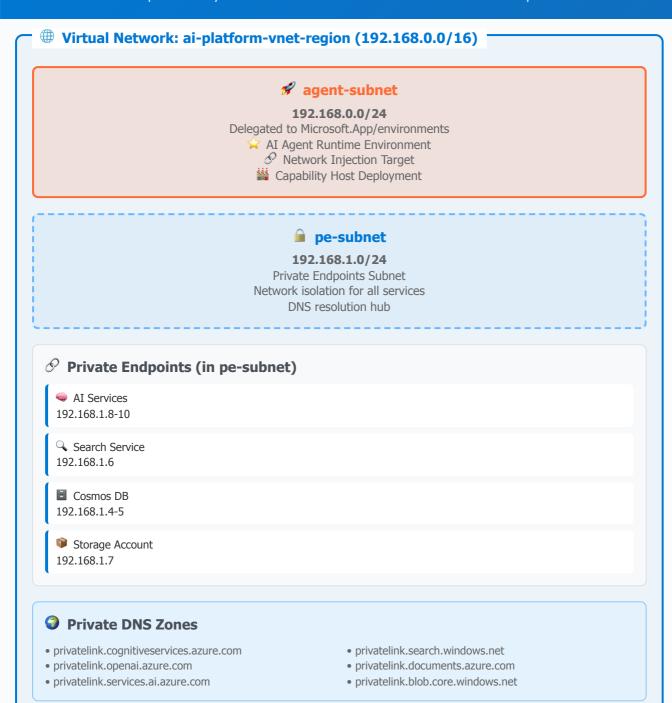
Enterprise-Ready AI Platform with Network Isolation & Private Endpoints

🌐 Virtual Network: ai-platform-vnet-region (192.168.0.0/16)

🚀 agent-subnet

192.168.0.0/24
Delegated to Microsoft.App/environments
⭐ AI Agent Runtime Environment
🔗 Network Injection Target
🏭 Capability Host Deployment

🔒 pe-subnet

192.168.1.0/24
Private Endpoints Subnet
Network isolation for all services
DNS resolution hub

🔗 Private Endpoints (in pe-subnet)

🧠 AI Services
192.168.1.8-10

🔍 Search Service
192.168.1.6

🗄️ Cosmos DB
192.168.1.4-5

📦 Storage Account
192.168.1.7

🌐 Private DNS Zones

- privatelink.cognitiveservices.azure.com
- privatelink.openai.azure.com
- privatelink.services.ai.azure.com
- privatelink.search.windows.net
- privatelink.documents.azure.com
- privatelink.blob.core.windows.net

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Azure AI Services Hub
ai-services-platform

🏭 AI Foundry Hub Service:

📓 **Project: ai-platform-project**   🎂 **Model: GPT-4o (GlobalStandard)**   🎯 **Capability Host: Agents**

Connected Resources:

- 🔍 Vector Store: ai-search-platform
- 📦 Storage: ai-storage-platform
- 🗄 State Store: ai-cosmos-platform
- 🌐 Network Injection: agent-subnet

🔗 External Connections:

- 🔳 Microsoft Fabric Workspace
- 🔥 Databricks Genie Analytics
- 📊 Power BI Premium Datasets
- 🗃 Data Lake Gen2 Sources

🛡 Security Features:

• Content Safety (DefaultV2 Policy) • AAD Authentication • Private Endpoint Only • System Assigned Identity

Azure AI Search
ai-search-platform

Configuration:

• Standard SKU (1 replica, 1 partition) • Vector Store for RAG Operations • System Assigned Identity • AAD Authentication Enabled • Public Network Access: Disabled • Semantic Search: Disabled

🔒 Network Security:

• Private Endpoint: 192.168.1.6 • DNS Zone: privatelink.search.windows.net • Connection State: Approved

Azure Cosmos DB
ai-cosmos-platform

State Store Configuration:

• SQL API with Session Consistency • Database: platform_memory • Autoscale: 100-1000 RU/s per container • TLS 1.2+ Only, Local Auth Disabled

📊 State Store Containers:

• agent-entity-store (Agent persistence) • conversation-state-store (Conversation state) • system-state-store (System state)

🔒 Security:

• Role-based Access Control • Private Endpoint: 192.168.1.4-5 • Geo-redundant Backup

Azure Storage Account
ai-storage-platform

Storage Configuration:

• StorageV2, Standard ZRS • Services: Blob, File, Queue, Table • Hot Access Tier • TLS 1.2+ Only

🗂 Containers:

• platform-blobstore (Project artifacts) • platform-agent (Agent runtime data)

🔒 Security Features:

• No Public Blob Access • Shared Key Access: Disabled • Private Endpoint: 192.168.1.7 • Cross-tenant Replication: Disabled

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🟧 AI/ML Services 🟦 Search & Vector Store 🟩 Database Services 🟧 Storage Services 🟧 Agent Runtime Subnet

🟦 Private Endpoints Subnet 🟦 Private Endpoints