## Enterprise Ethereum Architecture Stack

### Application
- **Dapps**
- **Infra Contracts & Standards**
- **Smart Contract Tools**
- **Infra Contracts & Standards**
- **Token Standards**
- **Identity Services**
- **Ethereum Name Service**
- **Permissioning Contracts**
- **Smart Contract Languages**
- **Developer Tools**
- **Security Analysis and Audits**
- **Formal Verification**
- **Explorers, Monitoring & Business Intelligence**

### Tooling
- **Credential Management**
- **Integration & Deployment Tools**
- **Client Interfaces / APIs**
- **Key Management**
- **Integrity Libraries**
- **Hardware Security Manager**
- **Enterprise Management Systems**

### Enterprise 3 P's
- **Privacy**
- **Performance**
- **Permissioning**
  - **On-Chain**
  - **Off-Chain / Trusted Compute**
  - **Private Transactions**
  - **On-Chain Optimization**
  - **Off-Chain Computing**
  - **Off-Chain / Trusted Compute**
  - **Organization Registry**
  - **Client Whitelist**
  - **Permission Checks**

### Core Blockchain
- **Storage/Ledger**
  - **On-Chain Public State**
  - **On-Chain Storage**
  - **Off-Chain Storage**
  - **On-Chain Private State**
- **Execution**
  - **EVM**
  - **Sync**
  - **Precompiled Contracts**
  - **Trusted Compute**
- **Consensus**
  - **Proof of Work**
  - **Proof of Authority**
  - **BFT Algorithms**

### Network
- **Network Protocol**
  - **DevP2P**
  - **Restrict Private Transaction Sharing**
- **Legend**
  - Yellow Paper
  - Public Ethereum
  - Application Layer
  - Enterprise Ethereum

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All Yellow Paper, Public Ethereum, and Application Layer components may be extended for Enterprise Ethereum as required.

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