

# RADIANT & Think Tank

Enterprise AI Platform Documentation

Version 4.18.0 | December 2024

**106+**

AI Models

**49**

Patterns

**9**

Modes

**15+**

Providers

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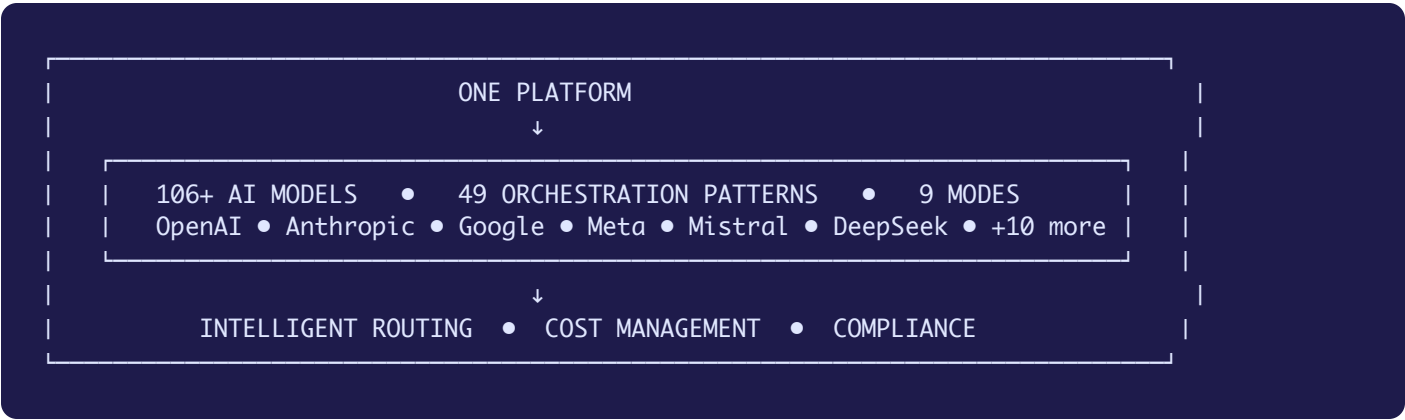
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# Section 1: Executive Summary

## What is RADIANT?

**RADIANT** is an enterprise-grade, multi-tenant AI platform that provides organizations with unified access to 106+ AI models through a single API, with intelligent orchestration that coordinates multiple AI systems to deliver superior results.



## What is Think Tank?

**Think Tank** is RADIANT's advanced problem-solving platform that decomposes complex problems into manageable steps, applies multi-AI reasoning, and synthesizes comprehensive solutions with confidence scoring.



## Key Differentiators

### 1. AGI-Driven Model Selection

Unlike platforms that use a single AI model, RADIANT's AGI layer **automatically selects the optimal combination of models** based on task analysis.

What We Analyze	What We Select
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Problem domain (coding, legal, medical...)	Best models for that domain
Task complexity	Number of models (2-5)
Reasoning requirements	Execution mode (thinking, fast, precise...)
Quality vs speed priority	Parallel execution strategy

**Result:** 20-40% better outcomes than single-model approaches.

## 2. 49 Proven Orchestration Patterns

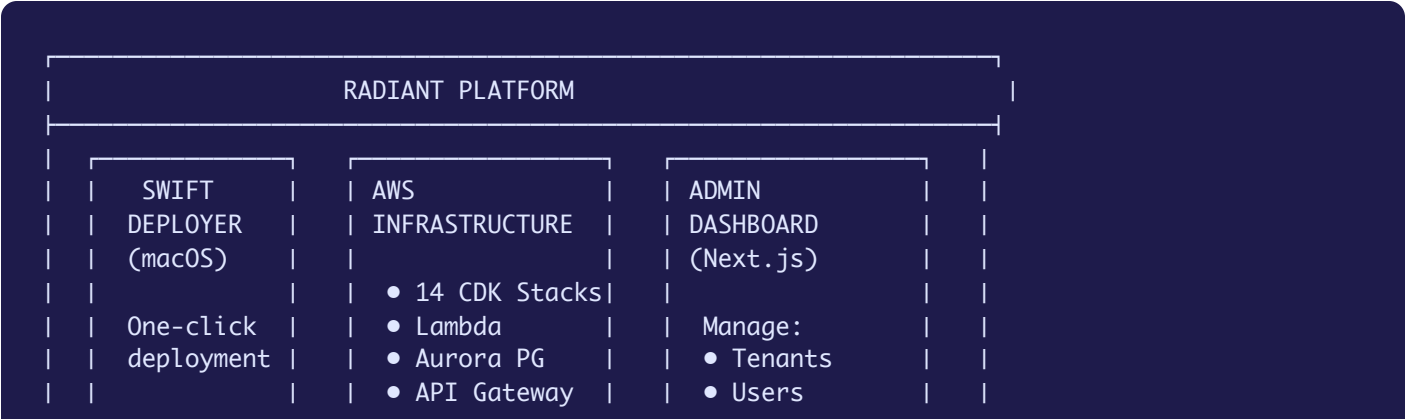
Research-backed workflows including:

- **AI Debate** - Two AIs argue, judge decides
- **Self-Refine** - Generate → Critique → Improve
- **Chain-of-Verification** - Fact-check every claim
- **Tree of Thoughts** - Explore multiple solution paths

## 3. Enterprise-Grade Security

Capability	Description
Multi-Tenant Isolation	PostgreSQL Row-Level Security
Compliance	SOC2, HIPAA-ready
Encryption	At-rest (AES-256) and in-transit (TLS 1.3)
Audit Logging	Complete activity trail

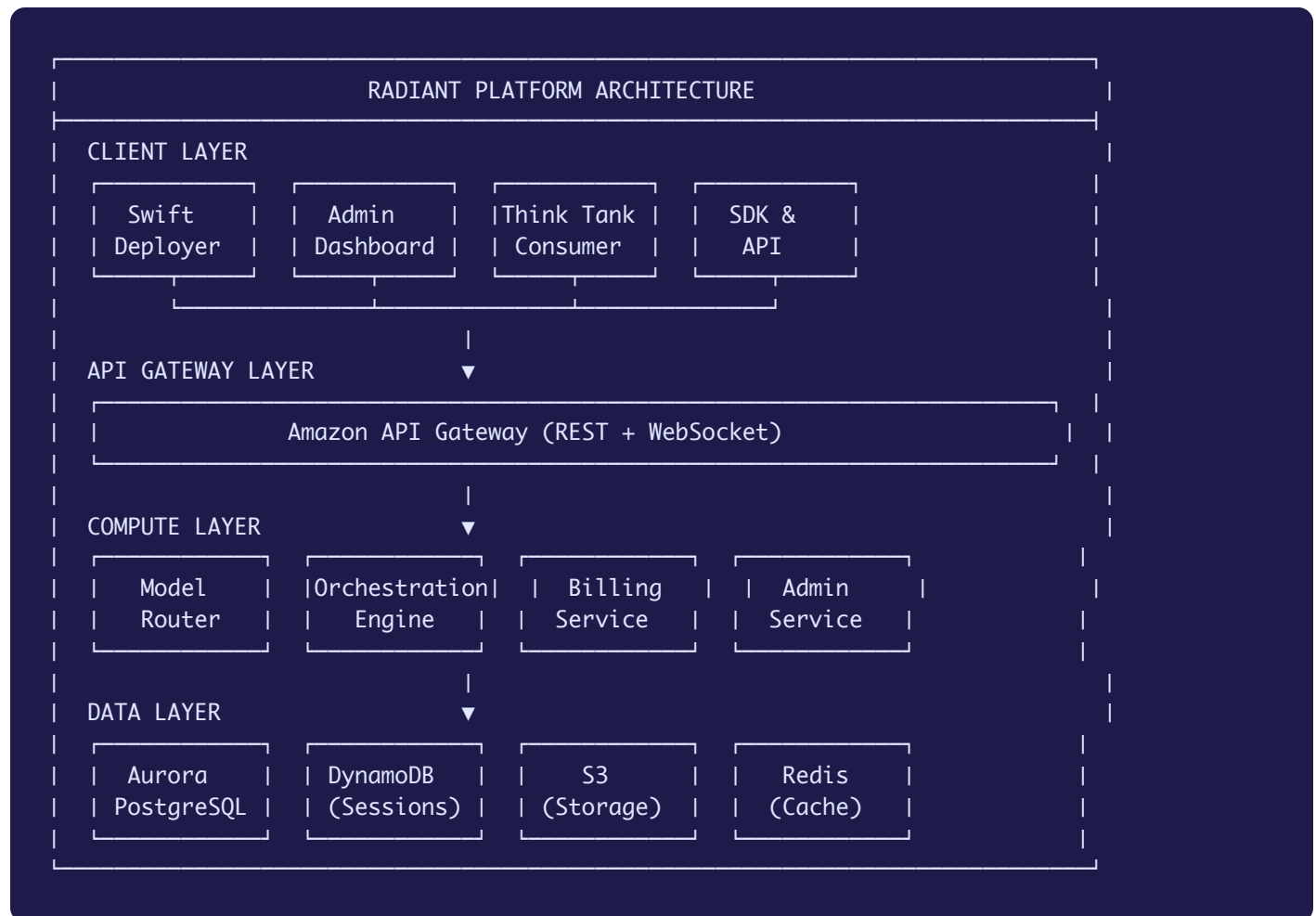
# Platform Components





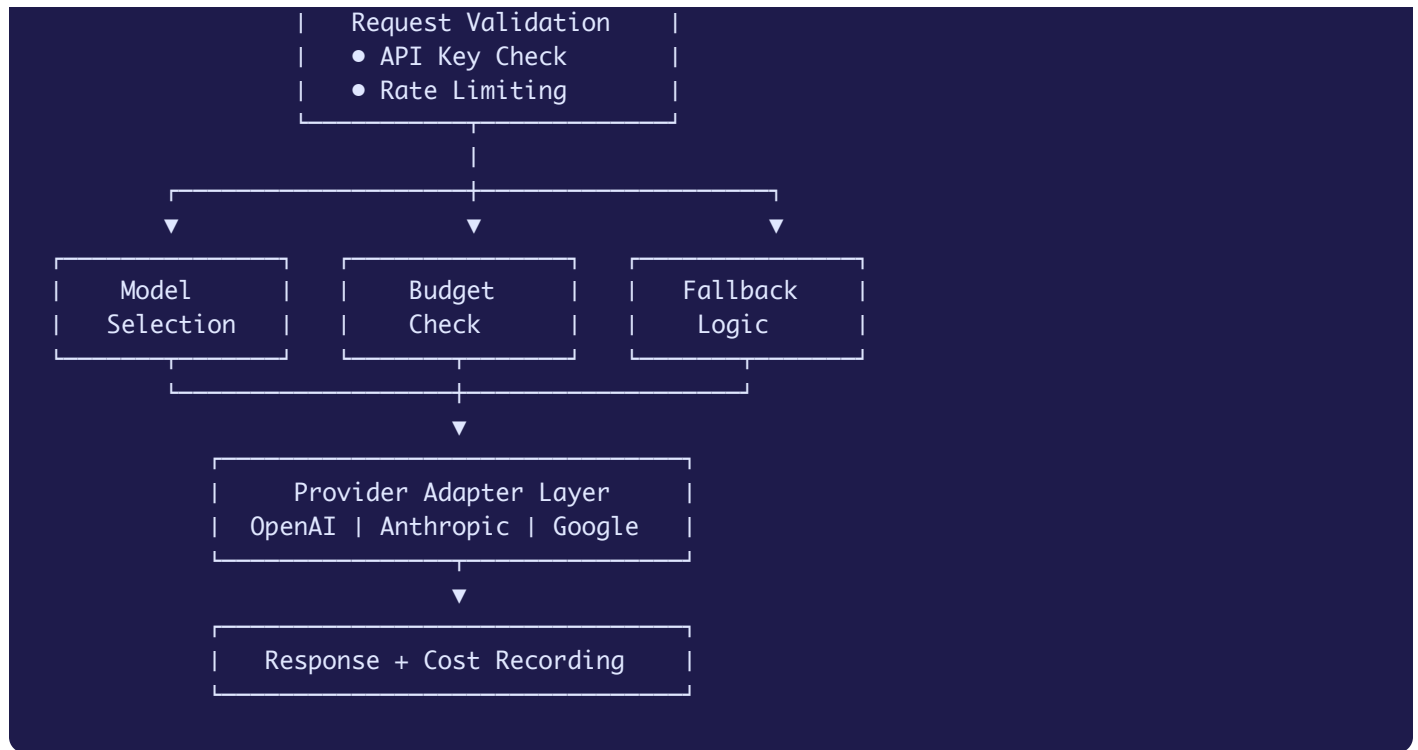
# Section 2: RADIANT Platform Architecture

## High-Level Architecture

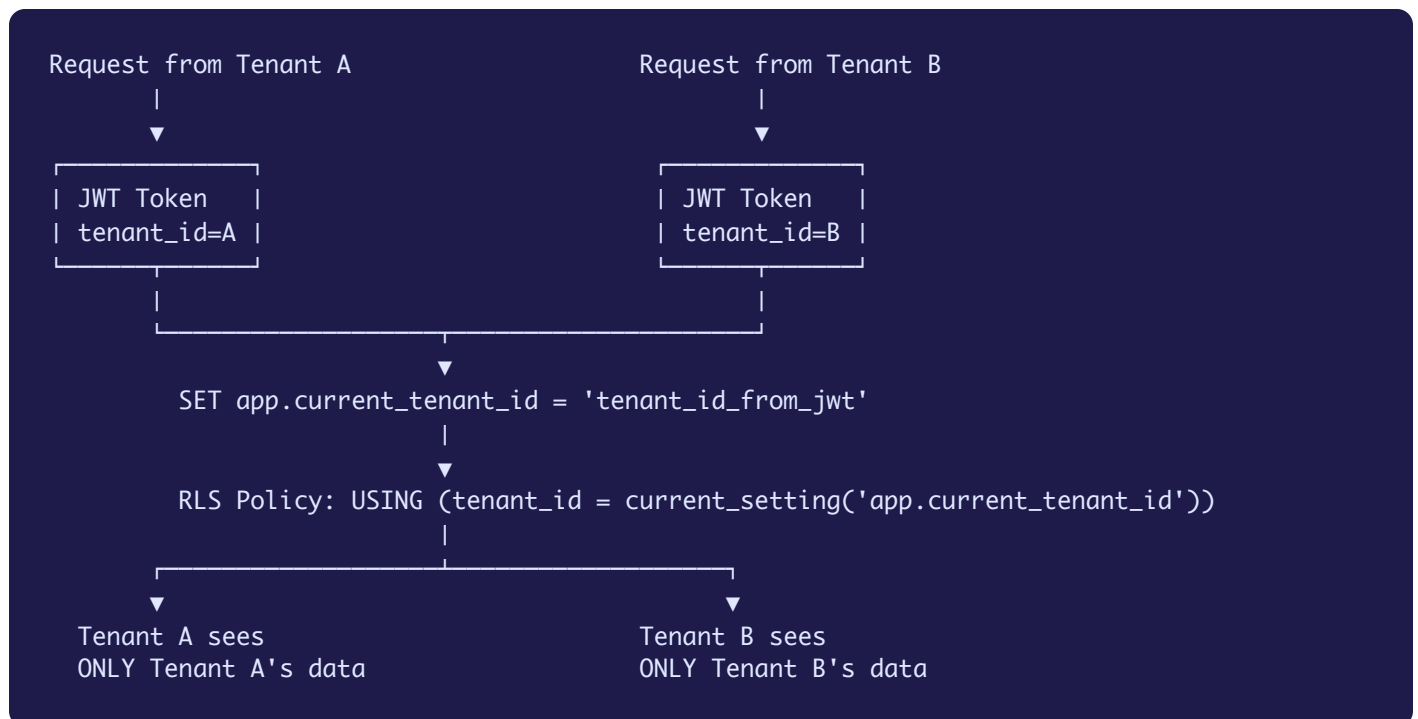


## Model Router Service





## Multi-Tenant Data Isolation (RLS)



## Security Architecture (5 Layers)

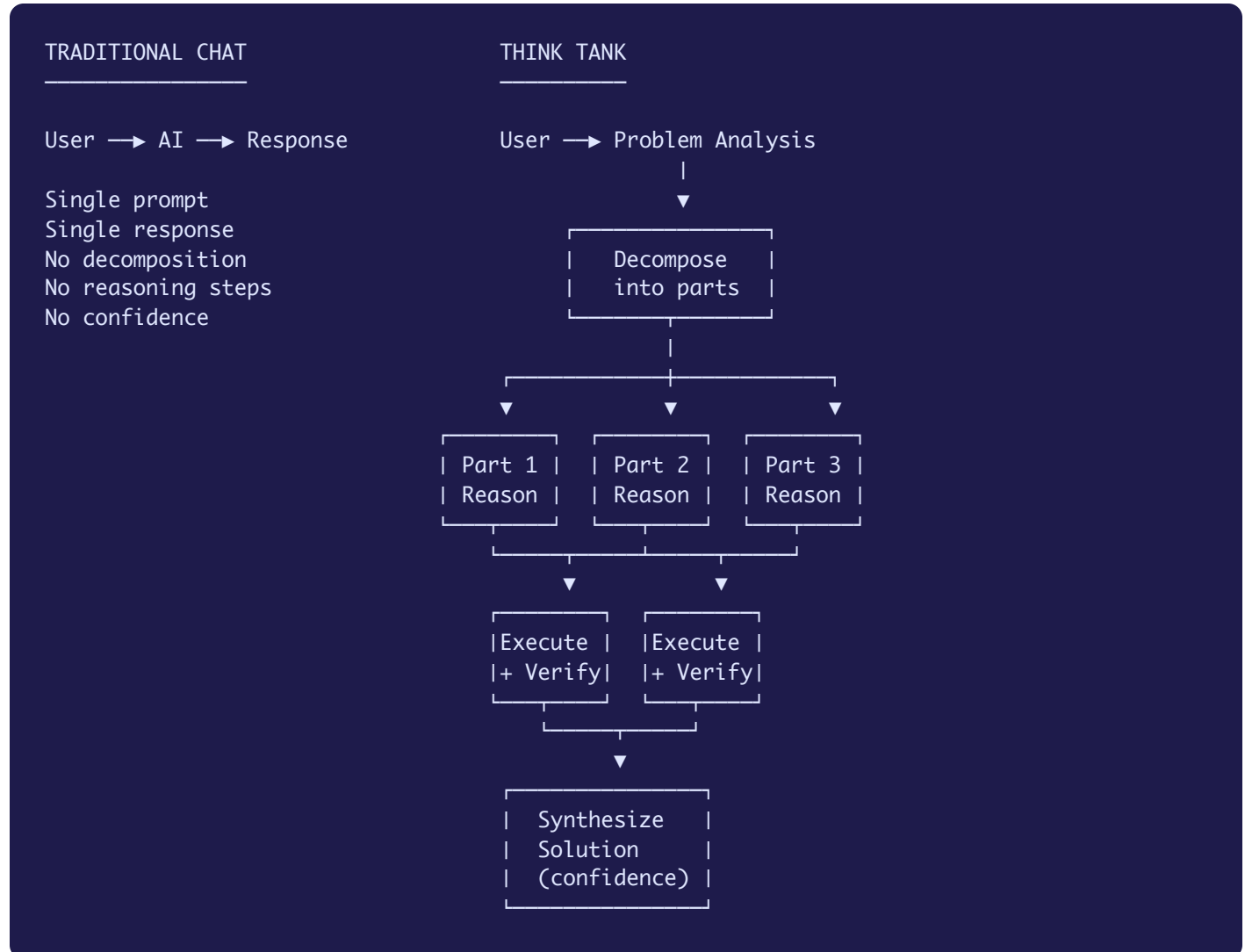
Layer	Components
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1. Network Security	VPC, WAF, CloudFront, TLS 1.3
2. Authentication	Cognito, JWT, API Keys, MFA
3. Authorization	RBAC, Permission sets, Resource policies
4. Data Security	RLS, AES-256, KMS, PHI sanitization
5. Audit & Compliance	CloudTrail, Audit tables, SOC2, HIPAA

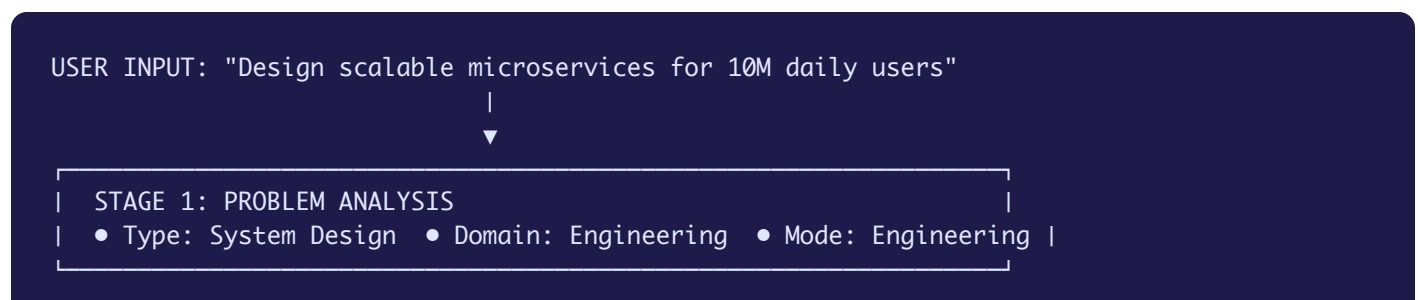


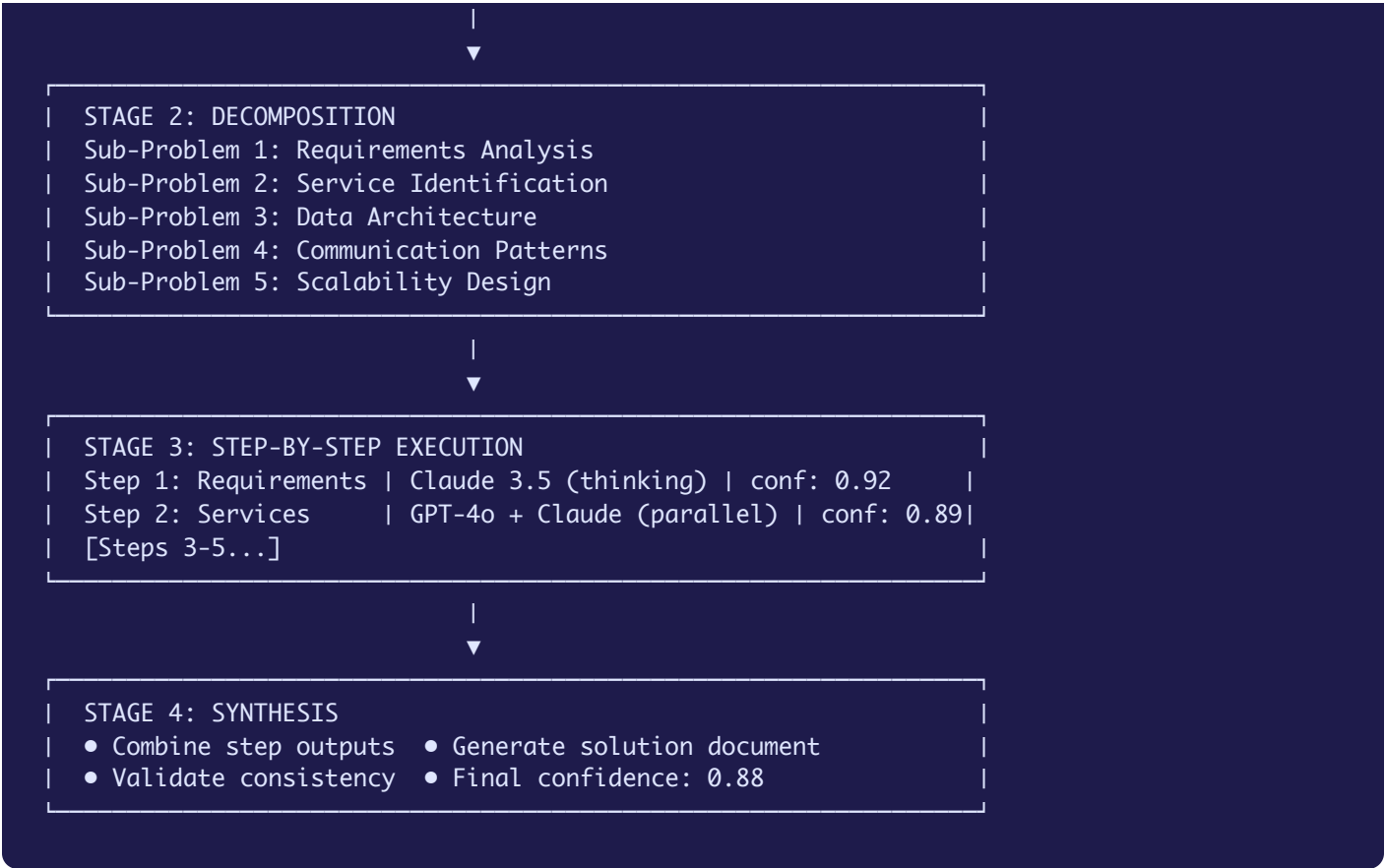
# Section 3: Think Tank Architecture

## Traditional Chat vs Think Tank






## Problem Solving Pipeline





## Domain Modes (8)

Mode	Best For	Models
 Research	Academic research, fact-finding	Perplexity, Claude
 Engineering	System design, architecture	Claude, GPT-4o, DeepSeek
 Analytical	Math, statistics, data	o1, Claude, DeepSeek R1
 Creative	Writing, ideation, design	Claude, GPT-4o
 Legal	Contracts, compliance	Claude (precise)
 Medical	Clinical analysis (HIPAA)	Claude (precise)
 Business	Strategy, planning	GPT-4o, Claude
 General	Mixed problems	Auto-selected

## Confidence Scoring

Score Range	Level	Meaning
0.9 - 1.0	VERY HIGH	Strong consensus, verified
0.7 - 0.9	HIGH	Reliable answer
0.5 - 0.7	MODERATE	Review recommended
0.3 - 0.5	LOW	Uncertain
0.0 - 0.3	VERY LOW	Needs verification

# Section 4: AGI & Workflow Orchestration

## The 49 Orchestration Patterns

Category	#	Example Patterns
Consensus & Aggregation	7	Self-Consistency, Meta-Reasoning
Debate & Deliberation	7	AI Debate, Society of Mind
Critique & Refinement	7	Self-Refine, Reflexion
Verification & Validation	7	Chain-of-Verification, LLM-as-Judge
Decomposition	7	Least-to-Most, Tree of Thoughts
Specialized Reasoning	7	Chain-of-Thought, ReAct
Multi-Model Routing	4	Mixture of Experts, FrugalGPT
Ensemble Methods	3	Model Ensemble, Blended RAG

## AGI Dynamic Model Selection

PROMPT: "Write recursive TSP algorithm with dynamic programming"

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1. DOMAIN DETECTION

Keywords: "algorithm", "recursive", "programming"

Detected: CODING (0.85)

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2. TASK ANALYSIS

Complexity: HIGH | Reasoning: YES | Precision: YES




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







3. QUERY LIVE MODEL METADATA

modelMetadataService.getAllMetadata() → 106 models

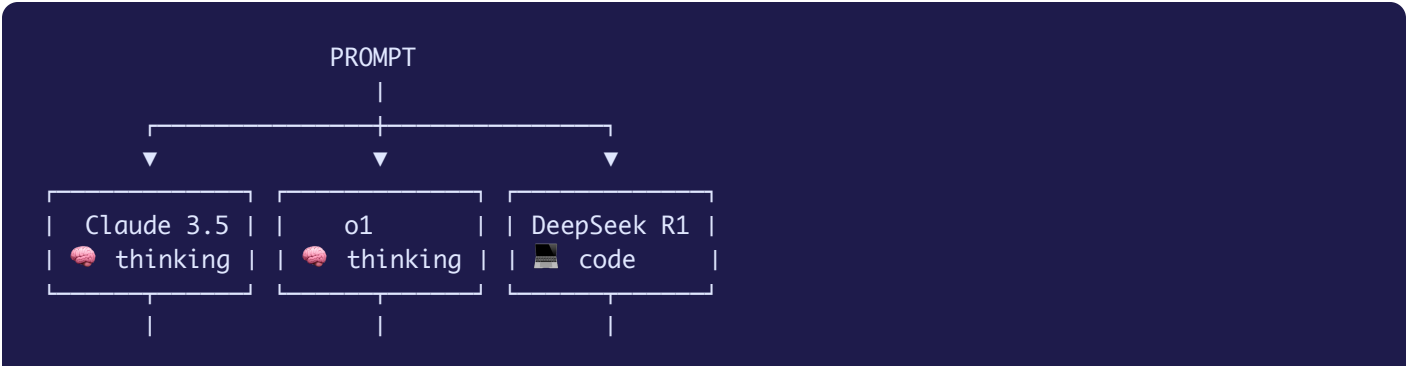
4. SCORE & SELECT WITH MODES

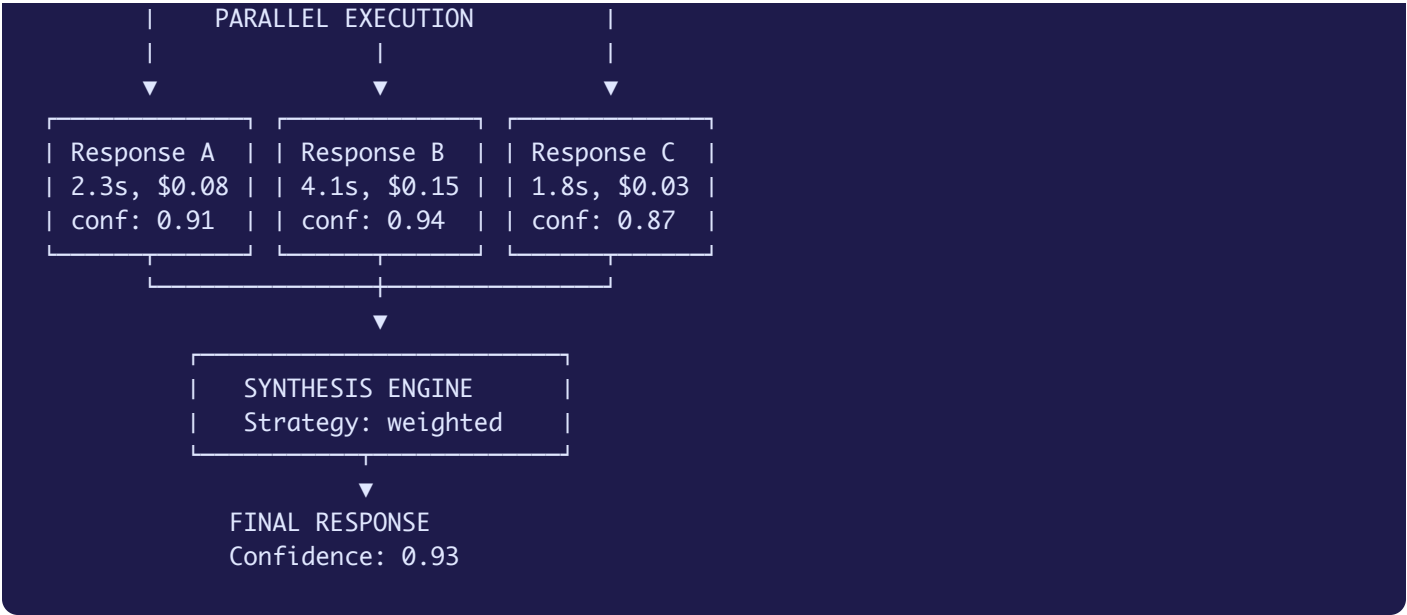
Model	Score	Mode
Claude 3.5 Sonnet	0.94	 thinking
OpenAI o1	0.92	 thinking
DeepSeek R1	0.88	 code

## Model Execution Modes (9)

Mode	Icon	Auto-Selected When	Parameters
Thinking		requiresReasoning + o1/claude/r1	thinkingBudget: 10000
Deep Research		requiresResearch + perplexity	searchDepth: comprehensive
Fast		flash/turbo/mini models	maxTokens: 2048
Creative		requiresCreativity	temperature: 0.9
Precise		requiresPrecision	temperature: 0.1
Code		coding domain	temperature: 0.2
Vision		vision-capable models	enableVision: true
Long Context		large context windows	maxTokens: 16384
Standard	—	default fallback	default params

## Parallel Execution





## Execution Modes

Mode	Behavior	Best For
ALL	Wait for all models	Maximum quality
RACE	First success wins	Low latency
QUORUM	Wait for X% of models	Balance

## Synthesis Strategies

Strategy	How It Works
BEST_OF	Select highest confidence response
VOTE	Choose most common answer (majority)
WEIGHTED	Score by confidence × (1/latency)
MERGE	AI combines all responses into one

# Section 5: Complete Features List

## 1. AI Model Management

Feature	Description
Unified API	Single API endpoint for 106+ AI models
Model Fallback	Automatic failover to backup models
Live Metadata	Real-time model availability and capabilities
Capability Scores	0-1 scores for reasoning, coding, creative, etc.
AI Research	Automated metadata updates via AI

## 2. Orchestration & Workflows

Feature	Description
49 Patterns	Proven multi-AI workflows from research
AGI Selection	Automatic model + mode selection
9 Modes	Thinking, Research, Fast, Creative, Precise, Code, Vision, Long-context, Standard
Parallel Execution	2-10 models simultaneously with synthesis
Visual Editor	Drag-and-drop workflow design

## 3. Think Tank Platform

Feature	Description
Problem Decomposition	Breaks complex problems into parts
Multi-Step Reasoning	Chain-of-thought with recorded steps

Confidence Scoring	0-1 quality score per step and overall
8 Domain Modes	Research, Engineering, Analytical, Creative, Legal, Medical, Business, General
Real-Time Collaboration	Multiple users with WebSocket sync

## 4. Billing & Cost Management

Feature	Description
Credit System	Pre-paid credit balances with auto-refill
Subscriptions	Free, Pro, Enterprise tiers
Budget Alerts	Spending limit notifications
Cost Estimation	Pre-request cost estimates
Usage Analytics	Spend by model, user, time

## 5. Multi-Tenant Platform

Feature	Description
Tenant Isolation	Complete data separation via RLS
User Management	Roles: Admin, User, Viewer
API Key Management	Scoped keys with rotation

## 6. Security & Compliance

Feature	Description
Row-Level Security	PostgreSQL RLS policies
Encryption	AES-256 at rest, TLS 1.3 in transit
Authentication	Cognito, JWT, MFA, SSO/SAML
Compliance	SOC2, HIPAA-ready



Audit Logging	Complete activity trail
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## 7. Developer Tools

Feature	Description
TypeScript SDK	Type-safe client library
Webhooks	Event notifications with retry logic
API Documentation	OpenAPI/Swagger docs
Integrations	Slack, Zapier, custom webhooks

## 8. Admin Dashboard

Feature	Description
Overview	System health, key metrics
Tenant Management	Customer administration
Analytics	Usage reports, business intelligence
Orchestration Editor	Visual workflow builder

## 9. Swift Deployer App

Feature	Description
CDK Deployment	One-click AWS deployment
Progress Tracking	Real-time deployment status
QA Test Suites	Run unit/integration tests
AI Assistant	Deployment guidance and error diagnosis

## **RADIANT v4.18.0 + Think Tank v3.2.0**

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