

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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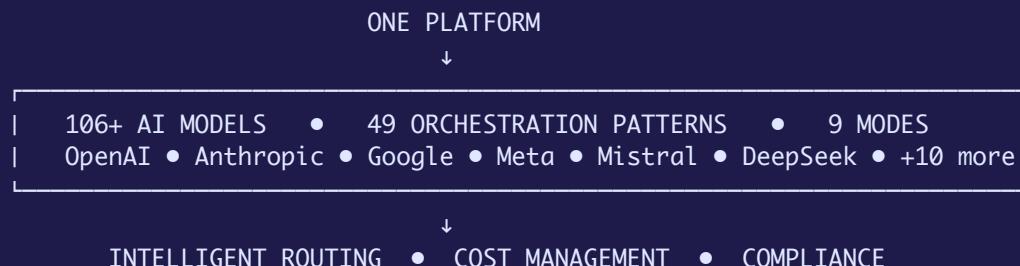
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Section 1: Executive Summary

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.

COMPLEX PROBLEM → DECOMPOSE → REASON → EXECUTE → SYNTHESIZE → SOLUTION + CONFIDENCE

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

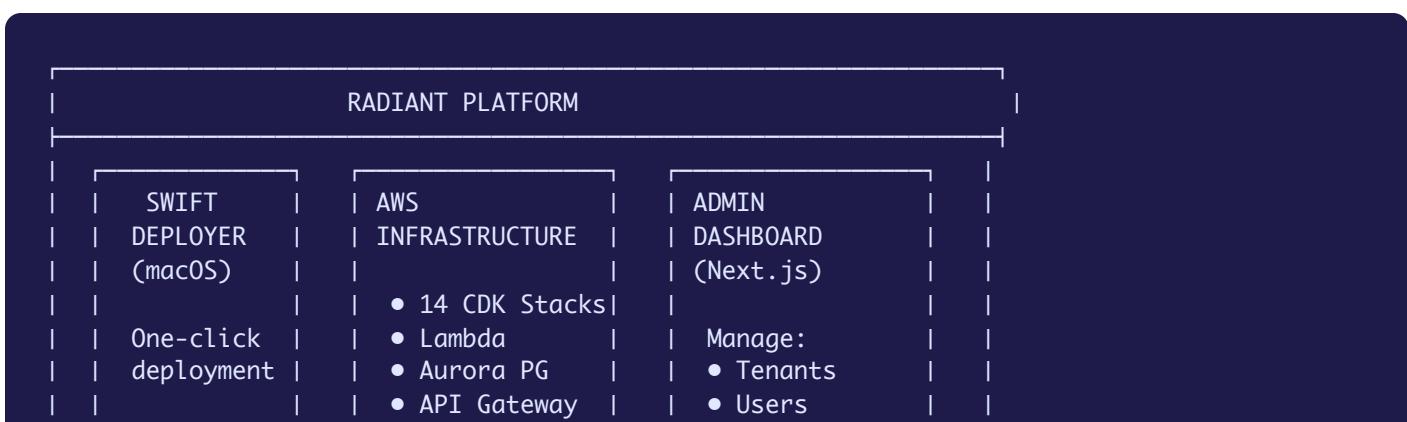
Research-backed workflows including:

- **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

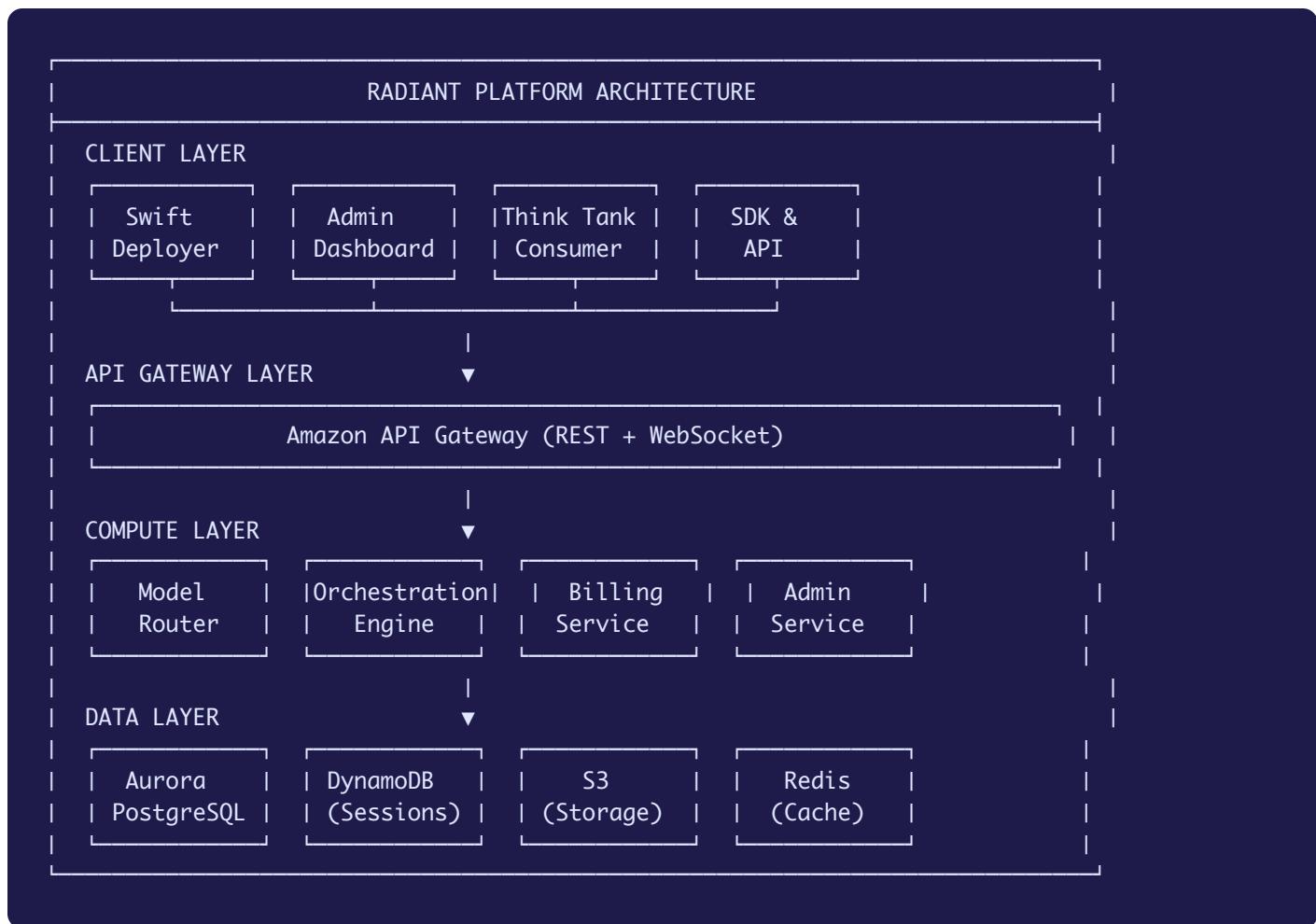




Section 2: RADIANT Platform

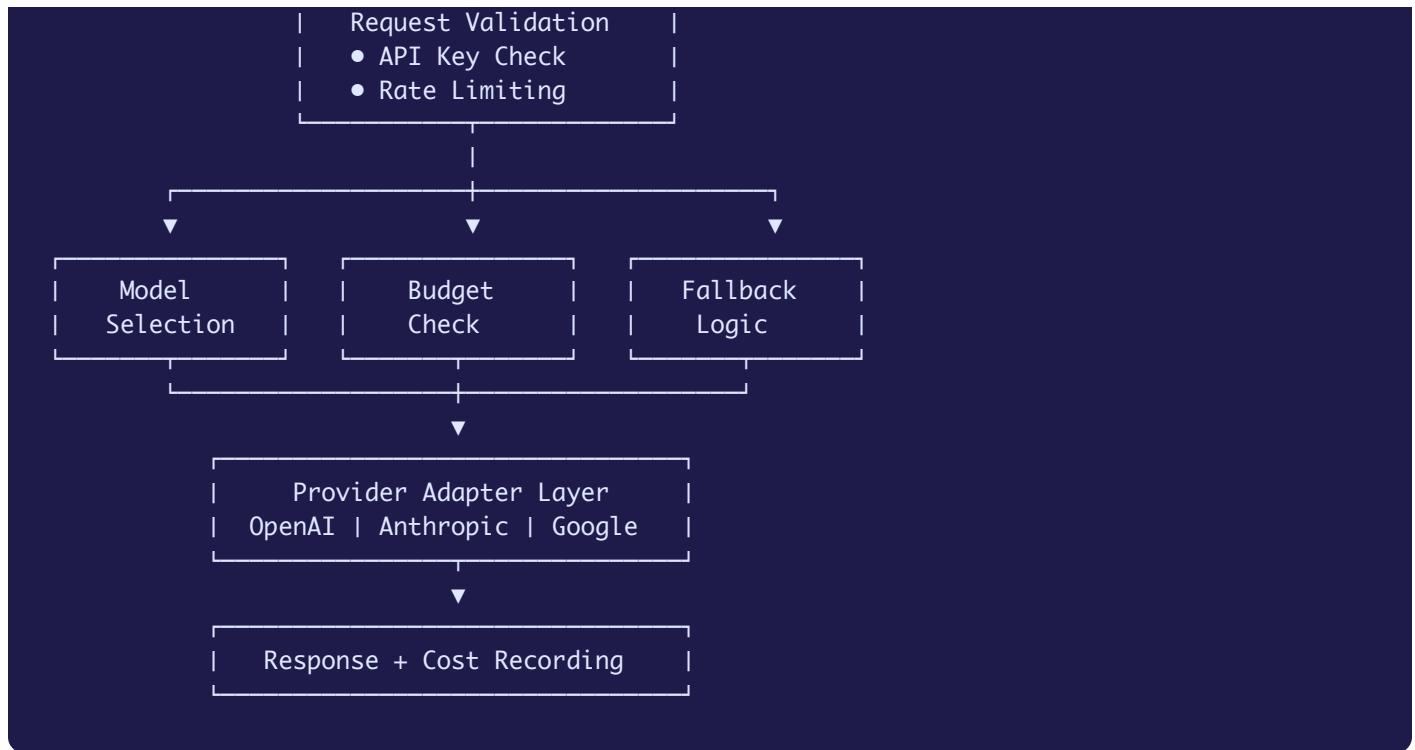
Architecture

High-Level Architecture

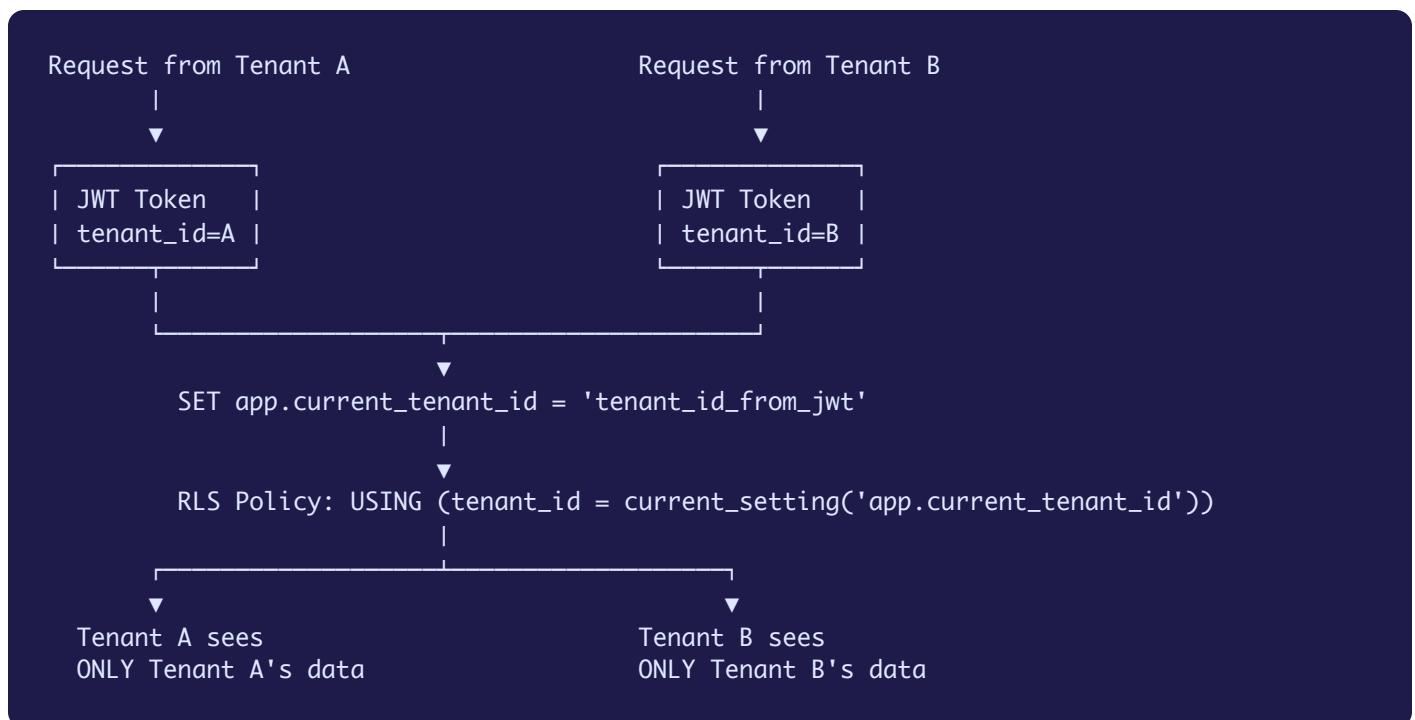


Model Router Service





Multi-Tenant Data Isolation (RLS)



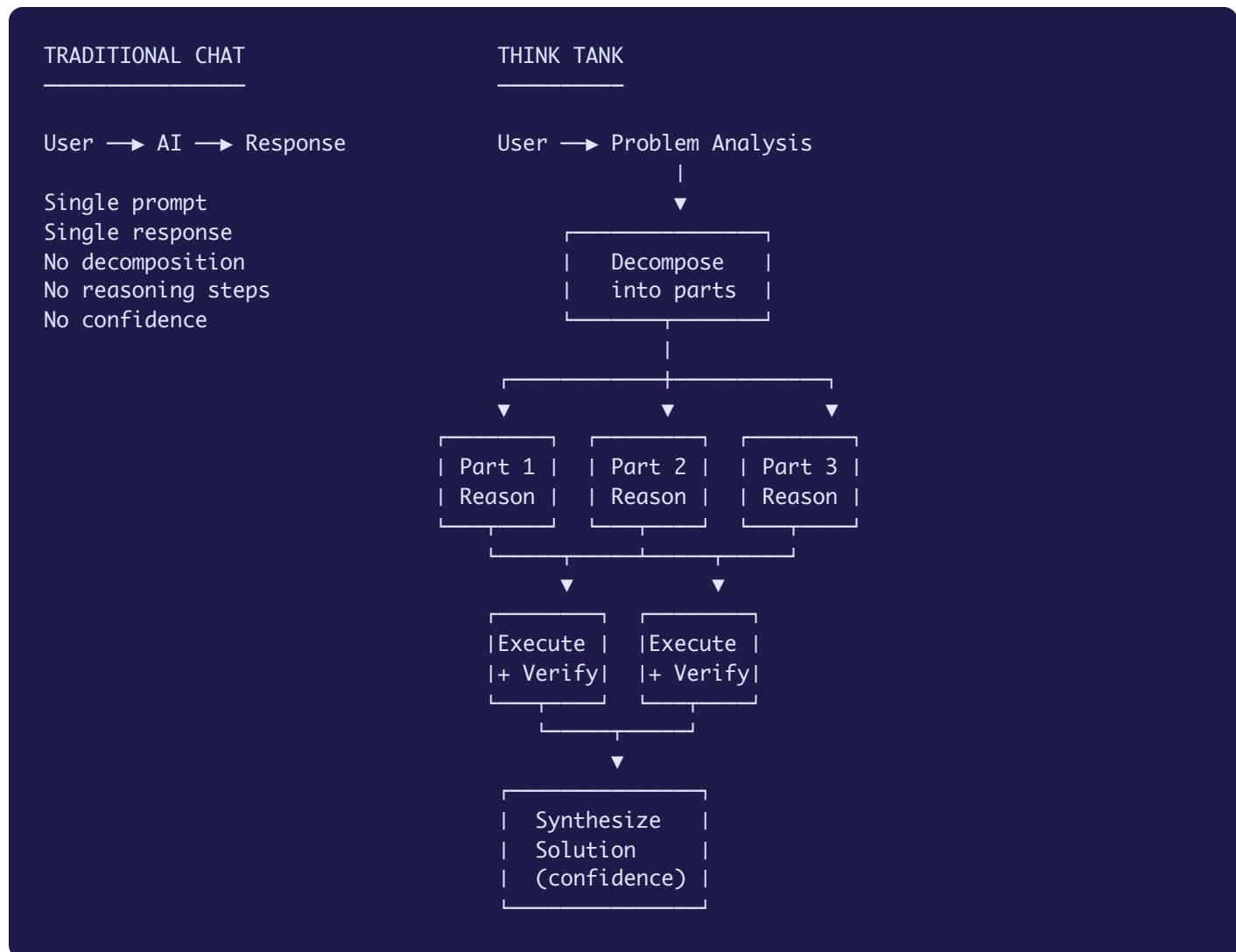
Security Architecture (5 Layers)

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



| STAGE 2: DECOMPOSITION
| Sub-Problem 1: Requirements Analysis
| Sub-Problem 2: Service Identification
| Sub-Problem 3: Data Architecture
| Sub-Problem 4: Communication Patterns
| Sub-Problem 5: Scalability Design

| STAGE 3: STEP-BY-STEP EXECUTION
| Step 1: Requirements | Claude 3.5 (thinking) | conf: 0.92
| Step 2: Services | GPT-4o + Claude (parallel) | conf: 0.89
| [Steps 3-5...]

| STAGE 4: SYNTHESIS
| • Combine step outputs • Generate solution document
| • Validate consistency • Final confidence: 0.88

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)

|

▼

| 2. TASK ANALYSIS
| Complexity: HIGH | Reasoning: YES | Precision: YES

|

▼

| 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

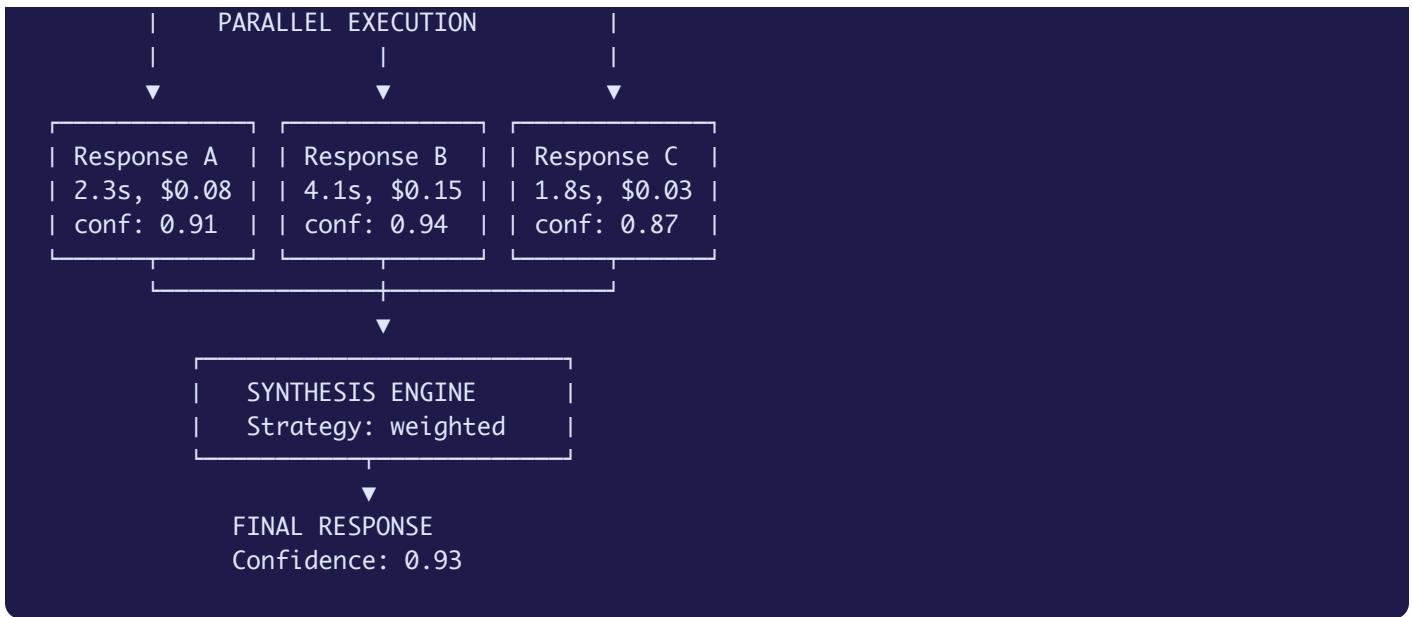
Model Execution Modes (9)

Mode	Icon	Auto-Selected When	Parameters
Thinking	🧠	requiresReasoning + o1/clause/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

PROMPT

Claude 3.5	o1	DeepSeek R1
🧠 thinking	🧠 thinking	💻 code



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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