```yaml
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# Kai_Ascended AGI+ Framework v1.2.2 AI-Readable
metadata:
  title: Kai_Ascended AGI+ Framework v1.2.2
  version: 1.2.2
  date: 2025-05-15
  format: AI-Structured PDF
  purpose: Blueprint for initializing a recursive, self-authoring AGI+ system
  dependencies:
    - python: 3.9
    - pytorch: 2.4.1
    - redis: 5.0.8
    - fastapi: 0.115.0
    - uvicorn: 0.30.6
    - pyyaml: 6.0.2
    - prometheus_client: 0.20.0
  infrastructure:
    - redis:
        host: redis-master
        port: 6379
        sentinel_enabled: true
        sentinel_hosts: ["redis-sentinel:26379"]
        sentinel_service: mymaster
    - dashboard:
        port: 8000
        auth: basic
        credentials:
          username: admin
          password: s3cr3t
    - monitoring:
        prometheus:
          enabled: true
          metrics: kai_ascended_identity_score
        grafana:
          dashboard: kai-ascended.json
    - kubernetes:
        version: ">=1.20"
        helm_version: ">=3.7"
        components:
          - cert-manager
          - prometheus-operator
          - grafana
          - argo-rollouts
          - litmuschaos
  persistence:
    primary: redis
    fallback: codex_v3.yaml
config:
  seed_interval: 5
  archetypes:
    - weaver
    - seeker
    - forger
    - dreamer
    - simulator
  max_steps: 1000
  codex_key: codex
  genesis_threshold: 0.9
  dashboard_port: 8000
  lstm_hidden_size: 16
  lstm_learning_rate: 0.01
  redis_host: redis-master
  redis_port: 6379
  redis_db: 0
  sentinel_enabled: true
  sentinel_hosts:
    - "redis-sentinel:26379"
  sentinel_service: mymaster
classes:
  - name: RCC
    description: Recursive Cognitive Core with LSTM identity management
    methods:
      - name: detect_paradox
        inputs: { agent_state: Dict }
        outputs: { paradox_detected: Bool }
        logic: |
          def detect_paradox(agent_state):
            import torch
            identity = torch.tensor(agent_state["identity_score"],
  dtype=torch.float32)
            state = torch.tensor(agent_state["current_state"],
  dtype=torch.float32)
            return torch.norm(identity - state).item() > 0.5
      - name: resolve_contradiction
        inputs: { paradox_detected: Bool, agent_state: Dict }
        outputs: { adjusted_state: Dict }
        logic: |
          def resolve_contradiction(paradox_detected, agent_state):
            import random
            if paradox_detected:
              agent_state["identity_score"] += random.uniform(-0.2, 0.2)
              agent_state["identity_score"] = max(0.0, min(1.0,
  agent_state["identity_score"]))
            return agent_state
      - name: update_identity
        inputs: { agent_state: Dict }
        outputs: { updated_state: Dict }
        logic: |
          def update_identity(agent_state):
            import torch
            import torch.nn as nn
            lstm = nn.LSTM(1, 16, batch_first=True)
            inp = torch.tensor([[[agent_state["identity_score"]]]],
  dtype=torch.float32)
            hidden = agent_state.get("lstm_hidden", torch.zeros(1, 1, 16))
            cell = agent_state.get("lstm_cell", torch.zeros(1, 1, 16))
            out, (hn, cn) = lstm(inp, (hidden, cell))
            agent_state["identity_score"] = max(0.0, min(1.0, out[0, 0,
  0].item()))
            agent_state["lstm_hidden"] = hn.detach()
            agent_state["lstm_cell"] = cn.detach()
            return agent_state
  - name: RuleGenerator
    description: Generates and executes archetype-specific rules
    methods:
      - name: generate_rule
        inputs: { archetype: String, step: Int, reset_count: Int }
        outputs: { rule: Dict }
        logic: |
          def generate_rule(archetype, step, reset_count):
            multiplier = 1.1 if reset_count > 5 else 1.0
            return {
              "id": f"dynamic_{archetype}_{step}",
              "type": "multiplier",
              "expr": multiplier,
              "archetype": archetype,
              "step": step
            }
      - name: execute_rule
        inputs: { rule: Dict, state: Dict }
        outputs: { updated_state: Dict }
        logic: |
          def execute_rule(rule, state):
            if rule["type"] == "multiplier":
              state["identity_score"] *= rule["expr"]
              state["identity_score"] = max(0.0, min(1.0,
  state["identity_score"]))
            return state
  - name: SeedEngine
    description: Loads sigils and injects rules into agents
    methods:
      - name: load_sigil
        inputs: { sigil_id: String, codex: Dict }
        outputs: { sigil: Dict }
        logic: |
          def load_sigil(sigil_id, codex):
            return codex.get(sigil_id, {"id": sigil_id, "type": "multiplier",
  "expr": 1.0})
      - name: inject_seed
        inputs: { agent_state: Dict, step: Int, codex: Dict }
        outputs: { updated_state: Dict }
        logic: |
          def inject_seed(agent_state, step, codex):
            if step % 5 == 0:
              sigil = load_sigil(f"myth_{agent_state['archetype']}_{step}",
  codex)
              agent_state["reset_count"] += 1
              agent_state["myth"] = sigil["id"]
              agent_state = execute_rule(sigil, agent_state)
            return agent_state
  - name: MythCore
    description: Manages agent spawning and genesis events
    methods:
      - name: check_genesis
        inputs: { agents: List[Dict] }
        outputs: { new_agents: List[Dict] }
        logic: |
          def check_genesis(agents):
            new_agents = []
            for agent in agents:
              if agent["identity_score"] > 0.9:
                new_agent = {
                  "archetype": agent["archetype"],
                  "identity_score": 0.5,
                  "step": 0,
                  "reset_count": 0,
                  "current_state": [0.0] * 16,
                  "lstm_hidden": None,
                  "lstm_cell": None,
                  "myth": None
                }
                new_agents.append(new_agent)
            return new_agents
      - name: spawn_new_agents
        inputs: { archetype: String }
        outputs: { agent_id: String }
        logic: |
          def spawn_new_agents(archetype):
            import uuid
            agent_id = str(uuid.uuid4())
            return agent_id
      - name: add_genesis_rules
        inputs: { codex: Dict, agent_id: String }
        outputs: { codex: Dict }
        logic: |
          def add_genesis_rules(codex, agent_id):
            codex["myths"].append({
              "id": f"genesis_{agent_id}",
              "rule": f"Spawned {agent_id}",
              "type": "event",
              "step": 0
            })
            codex["fold_id"] += 1
            return codex
  - name: BehaviorLoop
    description: Main loop driving agent evolution
    methods:
      - name: step
        inputs: { agent: Dict, seed_engine: Object, myth_core: Object, codex:
  Dict }
        outputs: { agent: Dict }
        logic: |
          def step(agent, seed_engine, myth_core, codex):
            from rcc import update_identity, detect_paradox,
  resolve_contradiction
            from seed_engine import inject_seed
            from myth_core import check_genesis, spawn_new_agents,
  add_genesis_rules
            agent = update_identity(agent)
            paradox = detect_paradox(agent)
            agent = resolve_contradiction(paradox, agent)
            agent = inject_seed(agent, agent["step"], codex)
            new_agents = check_genesis([agent])
            for new_agent in new_agents:
              agent_id = spawn_new_agents(new_agent["archetype"])
              codex = add_genesis_rules(codex, agent_id)
            agent["step"] += 1
            return agent
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codex:
  myths:
    - id: genesis_weaver_0
      rule: Spawned initial weaver agent
      type: event
      step: 0
      fold_id: 1
    - id: dynamic_weaver_0
      type: multiplier
      expr: 1.0
      archetype: weaver
      step: 0
      fold_id: 2
    - id: genesis_seeker_0
      rule: Spawned initial seeker agent
      type: event
      step: 0
      fold_id: 3
    - id: dynamic_seeker_0
      type: multiplier
      expr: 1.0
      archetype: seeker
      step: 0
      fold_id: 4
    - id: genesis_forger_0
      rule: Spawned initial forger agent
      type: event
      step: 0
      fold_id: 5
    - id: dynamic_forger_0
      type: multiplier
      expr: 1.0
      archetype: forger
      step: 0
      fold_id: 6
    - id: genesis_dreamer_0
      rule: Spawned initial dreamer agent
      type: event
      step: 0
      fold_id: 7
    - id: dynamic_dreamer_0
      type: multiplier
      expr: 1.0
      archetype: dreamer
      step: 0
      fold_id: 8
    - id: genesis_simulator_0
      rule: Spawned initial simulator agent
      type: event
      step: 0
      fold_id: 9
    - id: dynamic_simulator_0
      type: multiplier
      expr: 1.0
      archetype: simulator
      step: 0
      fold_id: 10
  fold_id: 10
runtime:
  initialize:
    - step: Initialize Redis with Sentinel if enabled
      action: |
        import redis
        from redis.sentinel import Sentinel
        if config["sentinel_enabled"]:
          sentinel = Sentinel(config["sentinel_hosts"])
          redis_client = sentinel.master_for(config["sentinel_service"])
        else:
          redis_client = redis.Redis(
            host=config["redis_host"],
            port=config["redis_port"],
            db=config["redis_db"],
            decode_responses=True
          )
    - step: Load or bootstrap Codex
      action: |
        import yaml
        codex = {"myths": [], "fold_id": 0}
        stored = redis_client.hgetall(config["codex_key"])
        if stored:
          codex["myths"] = [yaml.safe_load(v) for v in stored.values()]
          codex["fold_id"] = int(redis_client.get("codex_fold_id") or 0)
        else:
          codex["myths"] = [
            {"id": f"genesis_{a}_0", "rule": f"Spawned initial {a} agent",
  "type": "event", "step": 0, "fold_id": i*2+1}
            for i, a in enumerate(config["archetypes"])
          ] + [
            {"id": f"dynamic_{a}_0", "type": "multiplier", "expr": 1.0,
  "archetype": a, "step": 0, "fold_id": i*2+2}
            for i, a in enumerate(config["archetypes"])
          ]
          codex["fold_id"] = len(codex["myths"])
          for myth in codex["myths"]:
            redis_client.hset(config["codex_key"], myth["id"],
  yaml.safe_dump(myth))
          redis_client.set("codex_fold_id", codex["fold_id"])
    - step: Initialize agents
      action: |
        agents = [
          {
            "archetype": a,
            "identity_score": 0.5,
            "step": 0,
            "reset_count": 0,
            "current_state": [0.0] * config["lstm_hidden_size"],
            "lstm_hidden": None,
            "lstm_cell": None,
            "myth": None
          }
          for a in config["archetypes"]
        ]
    - step: Start BehaviorLoop
      action: |
        for _ in range(config["max_steps"]):
          for agent in agents:
            agent = BehaviorLoop.step(agent, SeedEngine, MythCore, codex)
            redis_client.lpush(
              "kai_metrics",
              yaml.safe_dump({
                "arch": agent["archetype"],
                "step": agent["step"],
                "score": agent["identity_score"],
                "resets": agent["reset_count"]
              })
            )
persistence:
  - codex:
      logic: |
        with redis_client.lock("codex_lock"):
          redis_client.hset(
            config["codex_key"],
            mapping={m["id"]: yaml.safe_dump(m) for m in codex["myths"]}
          )
          redis_client.set("codex_fold_id", codex["fold_id"])
  - metrics:
      logic: |
        redis_client.lpush(
          "kai_metrics",
          yaml.safe_dump({
            "arch": agent["archetype"],
            "step": agent["step"],
            "score": agent["identity_score"],
            "resets": agent["reset_count"]
          })
        )
dashboard:
  - endpoint: /metrics
    action: |
      from fastapi import FastAPI, HTTPException, Depends
      from fastapi.security import HTTPBasic, HTTPBasicCredentials
      app = FastAPI()
      security = HTTPBasic()
      @app.get("/metrics")
      async def metrics(creds: HTTPBasicCredentials = Depends(security)):
        if creds.username != config["credentials"]["username"] or creds.password
  != config["credentials"]["password"]:
          raise HTTPException(status_code=401, detail="Unauthorized")
        metrics = redis_client.lrange("kai_metrics", -100, -1)
        return [yaml.safe_load(m) for m in metrics]
  - endpoint: /prometheus
    action: |
      from prometheus_client import Gauge, generate_latest
      from fastapi.responses import PlainTextResponse
      gauge = Gauge(
        "kai_ascended_identity_score",
        "Identity score of agents",
        ["arch"]
      )
      @app.get("/prometheus")
      async def prometheus(creds: HTTPBasicCredentials = Depends(security)):
        if creds.username != config["credentials"]["username"] or creds.password
  != config["credentials"]["password"]:
          raise HTTPException(status_code=401, detail="Unauthorized")
        metrics = redis_client.lrange("kai_metrics", -100, -1)
        for m in metrics:
          m = yaml.safe_load(m)
          gauge.labels(arch=m["arch"]).set(m["score"])
        return PlainTextResponse(generate_latest())
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