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// ROOT RUNE: ORIGIN
// SYSTEM: Universal Healthcare Scheduling Orchestrator
// FACETS: ALL ENABLED

SYSTEM_CORE = CHAIN(
 Relata, // Patient-provider relationship graph
 Crona, // Time-based appointment orchestration
 Herculia, // Multi-phase workflow automation
 Hecatia // Multi-modal decision routing
) WRAPPED_IN Minerva-Cerulean; // Intelligent network routing

AVAILABILITY_ENGINE = LAYER(
 Chronomanta, // Dynamic scheduler manipulation
 Clarivis, // Real-time availability monitoring
 WRAP(Artemis, Virgo), // Precision-targeted query scheduling
 Poseida // Fluid appointment stream processing
) WRAPPED_IN Aurora-Selene; // Predictive scheduling with insight

PROVIDER_INTEGRATION = COMBO(
 Hermesia, // API communication relay between systems
 Arachnia, // Web infrastructure builder
 Transmutare, // Data format conversion across EHR systems
 Netheris // Data archiving and retrieval pipeline
) WRAPPED_IN Chimera-Hydra; // Multi-domain resilient integration

PATIENT_INTERFACE = LAYER(
 WRAP(Portalus, Pegasus), // Instant state transitions with rapid deployment
 Shiftara, // Dynamic UI mode swapping
 Heartha, // Session persistence and restore
 Bowsera // Adaptive user authentication
) WRAPPED_IN Unicorn-Pegasus; // Zero-defect rapid interface delivery

INTELLIGENT_MATCHING = NEST(
 CHAIN(
 Insighta, // Predictive analytics for urgency
 Athena, // AI-driven provider matching logic
 Labyrinth, // Recursive search and optimal resolution
 Confidara // Relationship-based conditional boosts
),
 WRAP(Oraclia, Ophiuchus) // Predictive AI with learning module
) WRAPPED_IN Athena-Daedalea; // Adaptive problem-solving strategy

REMINDER_SYSTEM = CHAIN(
 Relata, // Patient-provider relationship graph
 Crona, // Time-based appointment orchestration
 Herculia, // Multi-phase workflow automation
 Hecatia // Multi-modal decision routing
) WRAPPED_IN Minerva-Cerulean; // Intelligent network routing

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Magica,           // Event-driven automation triggers
Echo,             // Broadcast appointment reminders
WRAP(Crona, Selene), // Scheduled temporal orchestration
Assistara        // AI-driven proactive notification
) WRAPPED_IN Phoenix-Cerberus; // Self-repairing security for communications
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NO_SHOW_MITIGATION = COMBO(
  Karmalis,       // Causal feedback reputation system
  Oedipha,        // Predictive cancellation modeling
  Pandora,        // Risk management for slot wastage
  Nemesia        // Fairness algorithm for penalties
) WRAPPED_IN Nemesis-Thunder; // Risk-aware rapid response
```

```
INSURANCE_VERIFICATION = LAYER(
  Sphinx,        // Challenge-response verification logic
  Vulneris,      // System vulnerability scan for fraud
  WRAP(Counter, Scorpio), // Strategic threat mitigation
  Pyroxis       // Policy automation enforcement
) WRAPPED_IN Hephaestus-Cerberus; // Resilient verification pipelines
```

```
UNIFIED_CALENDAR = NEST(
  COMBO(
    Aggrega,      // Combine multiple provider calendars
    Moirae,       // Lifecycle orchestration across systems
    Entangla,     // Instant correlation sync across portals
    WRAP(Telek, Sagittarius) // Remote calendar manipulation with reach
  ),
  Atmara         // Unified distributed self-awareness
) WRAPPED_IN Minerva-Apollo-Poseida-Entangla; // Correlated emergent streaming
```

```
EMERGENCY_PRIORITIZATION = CHAIN(
  WRAP(Impacta, Aries), // High-priority burst performance
  Decisus,             // Decision buffer for triage
  WRAP(Ultima, Thunderbird), // Critical operation with energy burst
  Forcea               // Distributed priority command execution
) WRAPPED_IN Valkyrie-Leviathan; // Emergency orchestration at scale
```

```
WAITLIST_MANAGEMENT = COMBO(
  Odyssey,          // Long-running stateful journey tracking
  Persephona,       // Cyclical state management
  Laborina,         // Achievement tracking for wait position
  WRAP(Teleportis, Aquarius) // State transfer with flow management
) WRAPPED_IN Janus-Poseida-Valkyrie-Selene; // Contextual multi-layer recovery
```

```
SPECIALTY_ROUTING = LAYER(  
    Hecatia,           // Crossroads decision routing  
    WRAP(Divinus, Leo), // Modular specialist toolkit with authority  
    Chimeris,         // Hybrid multi-system specialty integration  
    Arcanum           // Archetype modeling for provider matching  
) WRAPPED_IN Chimera-Sphinx-Leviathan-Minerva; // Adaptive strategic orchestration
```

```
RESOURCE_OPTIMIZATION = NEST(  
    CHAIN(  
        Fluxa,           // Dynamic resource allocation  
        Equilibria,      // System equilibrium tuning  
        Demetra,         // Auto-scaling room/resource allocation  
        Wuvon           // Autonomous self-adjusting regulation  
    ),  
    Taora               // Universal system balance  
) WRAPPED_IN Thor-Leviathan-Hydra-Poseida; // High-impact adaptive operations
```

```
COMPLIANCE_LAYER = LAYER(  
    Inferna,           // Multi-tier HIPAA security architecture  
    WRAP(Absorbus, Cancer), // Adaptive defense with protection  
    Dharmara,          // Role consistency validation  
    Heraia             // Governance and RBAC  
) WRAPPED_IN Phoenix-Cerberus; // Self-repairing security
```

```
SELF_HEALING = COMBO(  
    Vitalis,           // Auto-recovery loops  
    Regena,            // Probabilistic redundancy  
    WRAP(Samsara, Phoenix), // Container restart orchestration with rebirth  
    Hydrina            // Multi-headed redundant spawning  
) WRAPPED_IN Pegasus-Phoenix-Hydra-Aurora; // Predictive auto-healing
```

```
ANALYTICS_DASHBOARD = LAYER(  
    Apollara,          // System analytics diagnostics  
    Clarivis,          // Real-time monitoring visualization  
    WRAP(Musara, Aurora), // Generative insight with illumination  
    Gaiana             // Ecosystem balance tracking  
) WRAPPED_IN Minerva-Orion-Thor-Aurora; // High-power emergent targeting
```

```
CROSS_PROVIDER_SYNC = NEST(  
    COMBO(  
        Byzantium,       // Byzantine consensus across systems  
        Entangla,        // Instant correlated state syncing  
        Hermesia,        // Message routing between providers  
        WRAP(Argonauta, Cerulean) // Collaborative network with connectivity
```

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),
Atmara           // Unified consciousness across domains
) WRAPPED_IN Chimera-Argonauta-Hydra-Phoenix; // Collaborative self-healing network

PERFORMANCE_SCALING = CHAIN(
    Spirala,           // Exponential growth capability
    WRAP(Energex, Helios), // Overdrive with high-power distribution
    Vitalis_Maxima,     // Health scaling under load
    WRAP(Modula, Capricorn) // Modular scaling with gradual climb
) WRAPPED_IN Pegasus-Aurora-Helios-Fractala; // Recursively scalable computation

BOOKING_INTELLIGENCE = NEST(
    LAYER(
        Koantra,           // Nonlinear reasoning for complex cases
        Metalearnara,      // Learning to learn from patterns
        WRAP(Insighta, Griffin), // Predictive insight with vigilance
        Oraclia           // Prophetic forecasting
    ),
    WRAP(Neurolink, Ophiuchus) // Neural interface with learning
) WRAPPED_IN Phoenix-Valkyrie-Sphinx-Metalearnara; // Self-correcting learning adaptive

ROLLBACK_PROTECTION = COMBO(
    Preserva,           // State preservation checkpoints
    Chronom,           // Version control snapshots
    WRAP(Defendora, Taurus), // Defensive recovery with stability
    Icarion           // Safety limiter for overload
) WRAPPED_IN Janus-Phoenix; // Context self-recovery

MOBILE_OPTIMIZATION = LAYER(
    WRAP(Pegasa, Pegasus), // Lightweight transport with speed
    Voidara,           // Minimalist reduction for edge devices
    WRAP(Shiftara, Gemini), // Mode switching with parallel processing
    Armora           // Hot-swappable mobile components
) WRAPPED_IN Unicorn-Aurora-Selene-Poseida; // Predictive optimized streaming

NOTIFICATION_ENGINE = CHAIN(
    Echo,           // Broadcast system
    WRAP(Sonora, Aquarius), // Audio interface with flow management
    Magica,         // Event-driven triggers
    WRAP(Assistara, Minerva) // AI assistant with strategic wisdom
) WRAPPED_IN Aurora-Selene; // Insight with temporal cycles

FRAUD_DETECTION = NEST(
    COMBO(

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Medusia,           // Threat detection freeze
Trojanis,          // Hidden payload analysis
Vulneris,          // Vulnerability mapping
WRAP(Fortifera, Cerberus) // Adaptive defense with multi-head
),
Karmalis           // Causal feedback for trust scoring
) WRAPPED_IN Aegis-Orion-Argonauta-Phoenix; // Collaborative self-healing defense
```

```
INTEROPERABILITY_HUB = LAYER(
  WRAP(Transmutare, Pisces), // Data transformation with harmony
  Circena,                  // Type casting conversion
  Hermesia,                 // Network relay
  WRAP(Arachnia, Cerulean) // Infrastructure building with connectivity
) WRAPPED_IN Chimera-Hydra; // Multi-domain resilience
```

```
LOAD_BALANCING = COMBO(
  Heroica,                // AI conflict resolution
  WRAP(Libra, Aquarius),  // Equilibrium with flow management
  Energos,                // Compute resource allocation
  Morphis                 // Adaptive process mode switching
) WRAPPED_IN Thor-Leviathan-Hydra-Poseida; // High-impact adaptive operations
```

```
CLINICAL_WORKFLOW = CHAIN(
  Herculia,               // Multi-phase task sequencing
  Ferrana,                // Transfer protocol gateway
  WRAP(Decisus, Virgo),   // Decision buffer with precision
  Moirae                  // Lifecycle orchestration
) WRAPPED_IN Athena-Apollo-Daedalea-Hephaestus; // Emergent problem-solving
```

```
BACKUP_RECOVERY = NEST(
  COMBO(
    Netheris,              // Data archiving pipeline
    WRAP(Hadeon, Atlas),   // Deep storage with infrastructure support
    Vitalis,               // Self-repair
    Chronom                // Temporal snapshots
  ),
  WRAP(Samsara, Hydra)     // Orchestration with redundancy
) WRAPPED_IN Ultra_Hydra; // Adaptive redundancy at scale
```

```
STRESS_TESTING = LAYER(
  Aresia,                 // Chaos simulation
  Kinetis,                // System-wide impact disruption
  Pandora,                // Risk management
  WRAP(Furiosa, Dragon)   // Rage mode with amplification
```

```
) WRAPPED_IN Nemesis-Gryphon-Thunderbird-Argonauta; // High-priority dynamic response
```

```
CONTINUOUS_IMPROVEMENT = CHAIN(  
    Metalearnara,          // Meta-learning  
    Evolvia,              // Versioned system upgrades  
    WRAP(Hephestus, Vulcan), // System creation with forge automation  
    Eternara              // Cyclical reinforcement optimization  
) WRAPPED_IN Ultra_Vulcan; // Continuous deployment at scale
```

```
EMERGENCY_FAILOVER = COMBO(  
    WRAP(Ultima, Aries), // Critical activation with burst  
    Pandoria,           // Fail-safe graceful recovery  
    WRAP(Vitalis, Phoenix), // Self-repair with resilience  
    Singularis          // Unique specialized recovery module  
) WRAPPED_IN Valkyrie-Leviathan; // Emergency orchestration
```

```
GLOBAL_ORCHESTRATION = EMERGE(  
    SYSTEM_CORE,  
    AVAILABILITY_ENGINE,  
    PROVIDER_INTEGRATION,  
    PATIENT_INTERFACE,  
    INTELLIGENT_MATCHING,  
    UNIFIED_CALENDAR,  
    CROSS_PROVIDER_SYNC,  
    COMPLIANCE_LAYER,  
    SELF_HEALING  
) WRAPPED_IN Ultra_Leviathan; // Central command global orchestration
```

```
FINALIZE(GLOBAL_ORCHESTRATION);
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// System integrity: Zephyrus root authority  
// Stability core: Hestara continuous maintenance  
// Final state convergence: Nirvara absolute stability  
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