

## v3.4-EXE-002 – Lifecycle Management & Twin Termination Logic

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### 1. Purpose & Scope

This document defines the lifecycle handling of MaxOneOpen runtime twins and outlines the logic for activation, transition, suspension and termination. It ensures that every twin instance is controllable, traceable, and policy-bound throughout its execution window.

### 2. Twin Lifecycle States

State	Description	Trigger/Event
Pre-Load	Twin is defined but inactive	Triggered by control intent
Activation	Twin is instantiated and bound	Matched to task context
Execution	Twin is processing input/output	Normal runtime phase
Suspension	Twin paused, memory retained	Low activity or manual hold
Termination	Twin container destroyed	Quota reached or control event
Verification	Final hash + memory destroyed	Audit signature protocol

### 3. Twin Termination Protocol

- Termination can be triggered by:
  - MaxControl policy
  - Timeout or quota breach
  - Manual admin signal
  - Memory violation or compliance alert
- Termination must:
  - Clear memory securely
  - Sign final state
  - Log hash reference
  - Self-destruct container

#### 4. Persistence Constraints

- Twin containers may not persist unless explicitly allowed
- Memory retention must follow certified policy templates
- No twin may write to uncontrolled shared memory
- Runtime state must be provable but not restorable

#### 5. Auditability & Certification

Each deployment must implement full lifecycle trace logic per twin. Certification requires:

- Lifecycle logs (signed + hashed)
- Finalization protocol execution record
- No deviation from approved state transitions

#### 6. Certification Relevance

Twin lifecycle logic is a core requirement for certified MaxOneOpen environments. Any fork must include compatible state logic, termination behavior, and memory governance to be eligible for certification.