

Night's Watch Crow

State Tracking

Roadmap: MVP

Night's Watch Crow State Tracking, a Minimum Viable Product feature, manages a connection tracking subsystem to provide comprehensive stateful packet inspection and connection management. The state tracking system:

- Maintains detailed connection state information across all supported protocols
- Tracks standard connection states: new, established, related, invalid, untracked
- Supports complex protocols with multiple related connections (e.g., FTP, SIP)
- Provides timeout configuration for different connection states
- Enables state-based filtering decisions for enhanced security
- Maintains connection status across NAT operations
- Tracks connection metrics including bytes, packets, and duration
- Supports helper modules for protocol-specific tracking requirements
- Allows manual state table management for administrative control
- Provides tunable memory limits and garbage collection parameters

Connection state information is preserved during ruleset updates through Crow's atomic replacement mechanism, ensuring uninterrupted tracking of existing connections when firewall rules are modified. The connection tracking system automatically times out inactive connections and supports administrative clearing of connection states.