

# ECS Connection Manager Hardware

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DATA SHEET

## Scalable high-performance application delivery

Kemp ECS Connection Manager offers the scalability, feature depth and security required to enable resilient delivery of a wide range of application workloads for organizations of all sizes and capabilities. ECS Connection Manager simplifies Dell ECS application delivery with easy management via web UI, API and Kemp 360 Central with a compelling TCO and outstanding customer support.

## Benefits of Kemp ECS Connection Manager

### Multi-network Access

ECS Connection Manager provides transparent access to ECS from multiple networks while maintaining security and existing network addressing.

### ECS Optimized QoS (Quality of Service)

Apply QoS to any ECS resource (bucket, URI) to ensure optimal performance of critical applications and protect against traffic storms and 'noisy neighbors'.

### Secure using TLS 1.3

ECS Connection Manager provides the latest and most robust security by enabling TLS 1.3 security without any impact on ECS infrastructure.

### Concurrent IPv6 and IPv4

ECS Connection Manager allows IPv6 and IPv4 co-existence with IPv6 to IPv4 gateway/proxy using a NIST certified IPv6 network stack as required by federal customers.

### SSL Offload

ECS Connection Manager simplifies the management of certificates and security policies while also reducing the security overheads on the ECS infrastructure.

### Route based on DNS query source

Optimize traffic routing by using the source subnet of the client where provided via EDNS (Extensions for DNS). Client traffic can now be mapped to specific storage locations to provide fine-grained control to support use cases such as localized in-rack traffic steering and routing ISP/customer networks to dedicated storage.

### **Seamless VDC failover**

ECS Connection Manager provides support for multi-site VDC environments with totally transparent failover and recovery in the event of a VDC outage with dynamic host resolution. Support up to 256 storage IP addresses on a single FQDN.

### **Purpose built ECS S3 traffic steering**

Intelligently deliver traffic to the S3 location that can best service the requests including storage using XOR optimizations.

### **ECS S3 Health Checking**

S3 optimized detection of outages and service degradation with redirection of traffic to resources that can service requests.

### **Hybrid path and host addressing**

Concurrent support of S3 'Path Style' and 'Host' addressing enabling support of multiple applications using different addressing against the same storage objects.

## **Support Subscriptions**

ECS Connection Manager support subscription offers flexibility, simplicity and value to meet your application delivery requirements and challenges. The ECS support subscriptions are mapped to common customer challenges and requirements and include multiyear support options.

Support subscription options include single or multi-year support and offer the benefits mentioned previously as well as the following of features and services:

- 24x7 Customer Support
- Software Updates
- Security Patches
- L4-L7 Application Delivery
- Edge Security Pack (ESP)
- Intrusion Prevention
- WAF with updated reputation data daily
- ECS Optimized QoS (Quality of Service)
- ECS S3 traffic steering
- GSLB with updated reputation data daily
- Network Telemetry
- Floating License
- Kemp 360 Vision Application Monitoring & Preemptive Alerting
- Kemp 360 Central Management and Orchestration

## Features

### Network Telemetry

- Export network flow data to Flowmon Collector in the industry standard IPFIX protocol format.
- Leverage the power of Flowmon Collector to store and analyze flow data, gaining visibility into the entire application value delivery chain to identify bottlenecks, misconfigurations, and potential security issues.
- Combine LoadMaster-exported data with IPFIX data from other network nodes on Collector to gain a complete picture of your infrastructure.
- View LoadMaster data on Flowmon Collector in dashboards and widgets specific to LoadMaster and the Virtual Services defined on it.

### Web Application Firewall (WAF)

- Real-time application threat mitigation
- Updated reputation data daily
- Threats mitigated
  - Cookie tampering
  - Cross site request forgery
  - Cross site scripting
  - Data loss prevention
  - SQL injection
  - PCI-DSS Section 6.6 compliance

### Edge Security Pack

- Microsoft TMG replacement
- Pre-authentication
- Multi-domain authentication & SSO
- X.509 client certificate authentication
- Custom login forms
- Two-factor authentication
- OIDC, SAML, Active Directory, RADIUS & LDAP
- Forms to Forms based authentication

### Intrusion Prevention

- Snort compatible IPS
- Aggregated health checks

### Global Server Load Balancing (GSLB)

#### Scheduling and Balancing

- Round Robin
- Weighted Round Robin
- Chained Failover (Fixed Weighting)
- Regional
- Real Server Load
- Location Based
- EDNS Client subnet

#### Security

- Allow/Deny List (Access Control List)
- Updated reputation data daily
- DDoS mitigation

#### Health Checking & Failover

- ICMP health checking of server farm machines
- Layer 4 TCP checking
- HTTP/HTTPS health check
- Active/Active High Availability
- Scale to 256 nodes per FQDN

### L4-L7 Application Delivery

#### General

- Server Load Balancing (SLB) for TCP/UDP based protocols
- TLS (SSL) Offload
- Layer 7 Content Switching
- Transparent caching for HTTP/HTTPS
- Compression of static and dynamic HTTP/HTTPS content
- HTTP/2 Support
- Up to 1000 Virtual and 1000 Real Servers
- NAT-based forwarding
- Support for Direct Server Return (DSR) configurations

- Configurable S-NAT support
- VLAN Trunking (802.1Q)
- Link interface bonding (802.3ad)
- IPv6 support for addressing and features
- IPv6 - IPv4 bidirectional conversion

### Health Checking

- Aggregated health checks
- ICMP health checking
- Layer 7 checking against any target server port
- Active/Hot Standby configurations for High Availability
- Stateful Failover
- Scale-out Clustering

### Session Persistence

- Source IP (L4)
- TLS (SSL) SessionID (L4)
- HTTP/HTTPS Browser-session (L7)
- HTTP/HTTPS WebClient-session (L7)
- RDP Login ID (L7)
- Port Following for mixed HTTP/HTTPS sessions
- Session reconnection for Microsoft RDS

### Scheduling and Balancing Methods

- Round Robin
- Weighted Round Robin
- Least Connection
- Weighted Least Connection
- Agent-based Adaptive
- Chained Failover (Fixed Weighting)
- Source-IP Hash
- Layer 7 Content Switching
- Global Server Load Balancing (GSLB)
- AD Group based traffic steering

### SSL/TLS Features

- Configurable TLS (1.0, 1.1, 1.2, 1.3) and

SSL (2.0, 3.0)

- Support for EV (Extended Validation) certificates
- OCSP certificate validation
- Server Name Identification (SNI) support
- Support for up to 1,000 TLS (SSL) certificates
- Automated TLS (SSL) certificate chaining
- Certificate Signing Request (CSR) generation
- FIPS 140-2 Level 1
- STARTTLS mail protocols (POP3, SMTP, IMAP)

### Administration

- Change auditing
- Web User Interface (WUI)
- SSH & physical console
- RESTful and PowerShell APIs
- VMware vRealize Orchestrator
- Context based help (WUI)
- Real time display of performance and availability
- Application templates
- Remote syslogd support
- Automated configuration backup
- Selective restore of configuration
- Connection draining
- Comprehensive logging and reporting
- SNMP support
- Diagnostic shell with in-line tcpdump

### Security

- Allow/Deny List (Access Control List)
- IP address filtering
- IPsec Tunnel support
- DDoS mitigation, including L7 rate-based attacks
- IPsec VPN to Azure, AWS, and public clouds
- Authenticated NTP

## Kemp 360 Central

- Centralized management and orchestration
- Included with Enterprise support subscription, and Enterprise Plus support subscription
- LoadMaster configuration management
- Automated LoadMaster backups
- Centralized & scheduled firmware updates
- LoadMaster logfile consolidation
- Performance management
- 3rd party load balancer support

## Kemp 360 Vision

- Managed service for application monitoring & preemptive alerting
- Included with Enterprise support subscription, and Enterprise Plus support subscription
- 24x7 automated issue escalation service
- Proactive issue management
- Integrated with Kemp Support ticketing

# Specification

	ECS Connection Manager H1	ECS Connection Manager H2
<b>Performance</b>	●	●
Application throughput (Layer 4)	15.8 Gbps	26.2 Gbps
Application throughput (Layer 7)	15 Gbps	25 Gbps
Bulk Encryption	8 Gbps	20 Gbps
SSL TPS (2K Keys)	12,000	20,000
Concurrent Layer 4 Connections	35,000,000	75,800,000
Concurrent Layer 7 Connections	262,500	525,000
Layer 7 HTTP requests/sec	175,000	1,000,000
Layer 4 requests/sec	1,600,000	2,000,000
Layer 4 connections/sec	450,000	675,000
<b>Hardware Platform</b>	●	●
CPU	3.8GHz, 4C/8T	2x 2.1GHz, 12C/24T
Memory (RAM Size)	32GB	64GB
Storage	2x 500GB HDD (RAID 1)	2 x 1TB HDD (RAID 1)
Gigabit Ethernet Ports	16	2
10 Gigabit Ports (SFP+)	4	12
VGA Ports	1	1
Console Ports	1 RJ45	1 RJ45
Rack Size	1U	2U
Dimensions	430 x 480 x 44mm (16.9 x 18.8 x 1.7 in)	437 x 570 x 88mm (17.2 x 22.5 x 3.5 in)
Weight	26.01lbs / 11.8kg	35.2lbs / 16kg
Storage Temperature	-4 to 167 °F (-20 to 75 °C)	-4 to 167 °F (-20 to 75 °C)
Operating Temperature	32 to 104 °F (0 to 40 °C)	32 to 104 °F (0 to 40 °C)
Storage Humidity	10% to 90% non-condensing	10% to 90% non-condensing
Operating Relative Humidity	10% to 90% non-condensing	10% to 90% non-condensing
Max Altitude in Operational Mode	16,404 feet (5,000 meters)	16,404 feet (5,000 meters)
Max Altitude in Non-Operational Mode	30,000 feet (9,144 meters)	30,000 feet (9,144 meters)
Input Voltage and Frequency Ranges	100-240VAC, 50-60Hz	100-240VAC, 50-60Hz
Hot-Swap, Redundant Power Supply	Yes	Yes
Max power supply	2x 450	2 x 700
Average Power Consumption (W)	165.27	479.6
Total Amp Drawn (A)	3.75 Max	5.8 Max
Heat Output (BTU)	563.57 Max	1635.5 Max
Acoustic Noise (dB)	62.7	71.4

	ECS Connection Manager H3	ECS Connection Manager H3 M
<b>Performance</b>	●	●
Application throughput (Layer 4)	42.2 Gbps	42.2 Gbps
Application throughput (Layer 7)	40 Gbps	40 Gbps
Bulk Encryption	20 Gbps	20 Gbps
SSL TPS (2K Keys)	35,000	35,000
Concurrent Layer 4 Connections	75,800,000	300,000,000
Concurrent Layer 7 Connections	525,000	3,000,000
Layer 7 HTTP requests/sec	1,250,000	1,250,000
Layer 4 requests/sec	2,600,000	2,600,000
Layer 4 connections/sec	825,000	825,000
<b>Hardware Platform</b>	●	●
CPU	2x 3.0GHz, 12C/24T	2x 3.0GHz, 12C/24T
Memory (RAM Size)	64GB	256GB
Storage	2 x 1TB HDD (RAID 1)	2 x 1TB HDD (RAID 1)
Gigabit Ethernet Ports	2	2
10 Gigabit Ports (SFP+)	12	12
VGA Ports	1	1
Console Ports	1 RJ45	1 RJ45
Rack Size	2U	2U
Dimensions	437 x 570 x 88mm (17.2 x 22.5 x 3.5 in)	437 x 570 x 88mm (17.2 x 22.5 x 3.5 in)
Weight	35.2lbs /16kg	35.2lbs /16kg
Storage Temperature	-4 to 167 °F (-20 to 75 °C)	-4 to 167 °F (-20 to 75 °C)
Operating Temperature	32 to 104 °F (0 to 40 °C)	32 to 104 °F (0 to 40 °C)
Storage Humidity	10% to 90% non-condensing	10% to 90% non-condensing
Operating Relative Humidity	10% to 90% non-condensing	10% to 90% non-condensing
Max Altitude in Operational Mode	16,404 feet (5,000 meters)	16,404 feet (5,000 meters)
Max Altitude in Non-Operational Mode	30,000 feet (9,144 meters)	30,000 feet (9,144 meters)
Input Voltage and Frequency	100-240VAC, 50-60Hz	100-240VAC, 50-60Hz
Redundant Power Supply	Yes	Yes
Hot-Swap, Max power supply	2 x 700	2 x 700
Average Power Consumption (W)	479.6	479.6
Total Amp Drawn (A)	5.8 Max	5.8 Max
Heat Output (BTU)	1635.5 Max	1635.5 Max
Acoustic Noise (dB)	71.4	71.4

	ECS Connection Manager H3 25G	ECS Connection Manager H3 40G
<b>Performance</b>	●	●
Application throughput (Layer 4)	57 Gbps	77 Gbps
Application throughput (Layer 7)	55 Gbps	75 Gbps
Bulk Encryption	25 Gbps	25 Gbps
SSL TPS (2K Keys)	40,000	40,000
Concurrent Layer 4 Connections	75,800,000	75,800,000
Concurrent Layer 7 Connections	525,000	525,000
Layer 7 HTTP requests/sec	1,250,000	1,250,000
Layer 4 requests/sec	2,600,000	2,600,000
Layer 4 connections/sec	825,000	825,000
<b>Hardware Platform</b>	●	●
CPU	2x 3.0GHz, 12C/24T	2x 3.0GHz, 12C/24T
Memory (RAM Size)	64GB	64GB
Storage	2 x 1TB HDD (RAID 1)	2 x 1TB HDD (RAID 1)
Gigabit Ethernet Ports	2	2
10 Gigabit Ports (SFP+)	8	8
25 Gigabit Ports (SFP28)	4	0
40 Gigabit Ports (QSFP+)	0	4
100 Gigabit Ports (QSFP28)	0	0
VGA Ports	1	1
Console Ports	1 RJ45	1 RJ45
Rack Size	2U	2U
Dimensions	437 x 570 x 88mm (17.2 x 22.5 x 3.5 in)	437 x 570 x 88mm (17.2 x 22.5 x 3.5 in)
Weight	35.2lbs /16kg	35.2lbs /16kg
Storage Temperature	-4 to 167 °F (-20 to 75 °C)	-4 to 167 °F (-20 to 75 °C)
Operating Temperature	32 to 104 °F (0 to 40 °C)	32 to 104 °F (0 to 40 °C)
Storage Humidity	10% to 90% non-condensing	10% to 90% non-condensing
Operating Relative Humidity	10% to 90% non-condensing	10% to 90% non-condensing
Max Altitude in Operational Mode	16,404 feet (5,000 meters)	16,404 feet (5,000 meters)
Max Altitude in Non-Operational Mode	30,000 feet (9,144 meters)	30,000 feet (9,144 meters)
Input Voltage and Frequency	100-240VAC, 50-60Hz	100-240VAC, 50-60Hz
Redundant Power Supply	Yes	Yes
Hot-Swap, Max power supply	2 x 700	2 x 700
Average Power Consumption (W)	479.6	479.6
Total Amp Drawn (A)	5.8 Max	5.8 Max
Heat Output (BTU)	1635.5 Max	1635.5 Max
Acoustic Noise (dB)	71.4	71.4



	ECS Connection Manager H3 100G
<b>Performance</b>	●
Application throughput (Layer 4)	91 Gbps
Application throughput (Layer 7)	90 Gbps
Bulk Encryption	25 Gbps
SSL TPS (2K Keys)	40,000
Concurrent Layer 4 Connections	75,800,000
Concurrent Layer 7 Connections	525,000
Layer 7 HTTP requests/sec	1,250,000
Layer 4 requests/sec	2,600,000
Layer 4 connections/sec	825,000
<b>Hardware Platform</b>	●
CPU	2x 3.0GHz, 12C/24T
Memory (RAM Size)	64GB
Storage	2 x 1TB HDD (RAID 1)
Gigabit Ethernet Ports	2
10 Gigabit Ports (SFP+)	8
25 Gigabit Ports (SFP28)	0
40 Gigabit Ports (QSFP+)	0
100 Gigabit Ports (QSFP28)	2
VGA Ports	1
Console Ports	1 RJ45
Rack Size	2U
Dimensions	437 x 570 x 88mm (17.2 x 22.5 x 3.5 in)
Weight	35.2lbs /16kg
Storage Temperature	-4 to 167 °F (-20 to 75 °C)
Operating Temperature	32 to 104 °F (0 to 40 °C)
Storage Humidity	10% to 90% non-condensing
Operating Relative Humidity	10% to 90% non-condensing
Max Altitude in Operational Mode	16,404 feet (5,000 meters)
Max Altitude in Non-Operational Mode	30,000 feet (9,144 meters)
Input Voltage and Frequency	100-240VAC, 50-60Hz
Redundant Power Supply	Yes
Hot-Swap, Max power supply	2 x 700
Average Power Consumption (W)	479.6
Total Amp Drawn (A)	5.8 Max
Heat Output (BTU)	1635.5 Max
Acoustic Noise (dB)	71.4

# Certification & Compliance

	ECS Connection Manager H1	ECS Connection Manager H2 & H3
FIPS	FIPS 140-2 Level 1 NIST Cert 2473	FIPS 140-2 Level 1 NIST Cert 2473
Safety Agency Approval: (IEC, EN, CSA, UL)	IEC 62368-1:2014 2nd Ed. EN 62368-1:2014+A11:2017 AS/NZS 62368.1:2018 CAN/CSA C22.2 No. 62368-1-14 UL 62368-1 2nd Ed.	IEC 62368-1:2014 2nd Ed. EN 62368-1:2014+A11:2017 AS/NZS 62368.1:2018 CAN/CSA C22.2 No. 62368-1-14 UL 62368-1 2nd Ed.
Electromagnetic Compatibility (EMC) Certifications: (CE, UKCA, FCC, VCCI)	EN 55032:2015 +AC:2016, Class A EN 55032:2012 +AC:2013, Class A EN 61000-3-2:2014, Class A EN 61000-3-3:2013 EN 55035:2017 CISPR 32:2015+COR1:2016 AS/NZS CISPR 32:2015, Class A 47 CFR FCC Part 15 Subpart B, Class A ICES-003:2016 Issue 6, updated Apr. 2019 Class A ANSI C63.4:2014 VCCI-CISPR 32:2016, Class A	EN 55032:2015 +AC:2016, Class A EN 55032:2012 +AC:2013, Class A EN 61000-3-2:2014, Class A EN 61000-3-3:2013 EN 55035:2017 CISPR 32:2015+COR1:2016 AS/NZS CISPR 32:2015, Class A 47 CFR FCC Part 15 Subpart B, Class A ICES-003:2016 Issue 6, updated Apr. 2019 Class A ANSI C63.4:2014 VCCI-CISPR 32:2016, Class A
RoHS Compliant	Yes	Yes
WEEE Compliant	Yes	Yes
REACH Compliant	Yes	Yes

	ECS Connection Manager H3 25G/H3 40G/H3 100G & H3 M
FIPS	FIPS 140-2 Level 1 NIST Cert 2473
Safety Agency Approval: (IEC, EN, CSA, UL)	IEC 62368-1:2014 2nd Ed. EN 62368-1:2014+A11:2017 AS/NZS 62368.1:2018 CAN/CSA C22.2 No. 62368-1-14 UL 62368-1 2nd Ed.
Electromagnetic Compatibility (EMC) Certifications: (CE, UKCA, FCC, VCCI)	EN 55032:2015 +AC:2016, Class A EN 55032:2012 +AC:2013, Class A EN 61000-3-2:2014, Class A EN 61000-3-3:2013 EN 55035:2017 CISPR 32:2015+COR1:2016 AS/NZS CISPR 32:2015, Class A 47 CFR FCC Part 15 Subpart B, Class A ICES-003:2016 Issue 6, updated Apr. 2019 Class A ANSI C63.4:2014 VCCI-CISPR 32:2016, Class A
RoHS Compliant	Yes
WEEE Compliant	Yes
REACH Compliant	Yes