Exar’s DX2040-SX4 compression and security acceleration card delivers unprecedented compression and security performance to OEMs in the data analytics, storage, and cloud security markets. The DX2040-SX4 provides 30 gigabits/sec of simultaneous compression, encryption, and hashing while supporting up to 40,000 operations/sec of RSA (2048 bit key size). The DX2040-SX4 value proposition includes best in class compression ratios at maximum throughput, delivering compression ratios that are comparable with gzip level 9 while sustaining the full 30 gigabits/sec of device throughput.

Connecting to the host with an eight lane PCI Express 3.0 interface (four-bit lane electrical interface), the DX2040-SX4 offloads the host from CPU-intensive compression, encryption, and public key algorithms, providing the processing power of hundreds of enterprise class x86 CPU cores at much lower power and cost. The DX2040-SX4 Class of Service provides multiple command queues to prioritize traffic, enabling OEMs to avoid over provisioning and enforce service level agreements for performance critical applications. The DX2040-SX4 incorporates Single Root I/O Virtualization (SR-IOV) to support virtualized environments, integrating 128 virtual functions.

The DX2040-SX4 includes a user friendly Software Development Kit (SDK) which includes a wide range of features for enhanced performance, advanced management and monitoring, and high reliability and availability, and the SDK is API-compatible with Exar’s DX1700 and DX1800 families of compression and security acceleration cards. In addition, the DX2040-SX4 has been integrated with AltraHD, Exar’s hardware accelerated compression solution for Hadoop, as well as Exar’s hardware accelerated OpenSSL package.

The DX2040-SX4 is available in a compact low profile, half length form factor, enabling easy integration and deployment across a wide range of platforms.

Key Benefits
The DX2040-SX4 leading edge compression engine minimizes the data footprint while maximizing performance, delivering a multitude of benefits. Costly I/O bottlenecks for both storage and networking are removed or minimized, enabling maximum system throughput at minimum latency.

Storage and data analytics applications benefit from higher bandwidth disk I/O and higher storage capacity. Data encryption and hashing are also supported in addition to compression without suffering penalties in either performance or latency.

The DX2040-SX4 supports a wide range of encryption, authentication, and public key algorithms for networking security, providing all required support for IPsec and SSL/TLS/DTLS, including high performance public key processing, which enables the secure infrastructure needed to support the high transaction throughput required by cloud and web-based applications. Security features also include support for the elliptic curve cryptography (ECC) algorithms and Suite B.

Target Applications
The DX2040-SX4's high performance, scalability, and low power addresses the requirements for a variety of enterprise applications, including data warehouses, Hadoop clusters, storage arrays, application delivery controllers, WAN optimization appliances, security gateways, and hardware security modules.
# DX2040-SX4 Summary

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Maximum Performance Compression/Encryption/Hash</th>
<th>Maximum Performance RSA 2048 bit ops/sec</th>
<th>Power Consumption (max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DX2040-SX4</td>
<td>30 Gbit/sec/3.75 Gb/sec</td>
<td>40K</td>
<td>&lt; 25W</td>
</tr>
</tbody>
</table>