Microsoft Dynamics CRM* 2013 running on servers powered by the Intel® Xeon® processor E7 v2 family provides the foundation for successfully navigating today’s customer-empowered marketplace. This customer relationship management (CRM) solution delivers leadership capability across a wide range of requirements, and includes integrated support for mobility, social network integration, and business process management (BPM). It also provides the scalable performance, mission-critical reliability, and overall flexibility your enterprise needs to compete successfully in the global marketplace.

Because customer engagement models are evolving so quickly, Microsoft has accelerated its development cycle, and has announced new features that will include advanced marketing planning, a unified service desk for call centers, and a social listening service for analyzing sentiment across social networks—all expected for release in the first half of 2014. Servers based on the Intel Xeon processor E7 v2 family provide the scalability and headroom you need to integrate these and other new features while delivering the responsive performance that is so essential for front-line, customer-facing activities.

Delight Your Customers Consistently and Efficiently

Microsoft Dynamics CRM 2013 makes work more personal and collaborative throughout your business, by helping people across your sales, marketing, and customer care teams synchronize their efforts to deliver superior customer experiences. The simple and intuitive interface provides every user with actionable intelligence based on their specific roles within clearly defined processes. Intelligence is built into the application so it automatically detects trends, facilitates decisions, and suggests actions that help drive successful outcomes throughout the customer lifecycle.

Context-rich records with images, maps, and customized views provide users with the right information to act knowledgeably and decisively to address customer needs. With Microsoft Dynamics CRM 2013, there is no guessing at what to do next. Users always know what has been accomplished and what remains to be done. Ready-to-use business processes support collaborative selling, and a simple point-and-click designer makes it easy for business users to modify workflows and create new processes.

Your customers have more choices than ever before. No matter what business you’re in, they can find alternatives to your products and services almost instantly and connect with like-minded individuals around the world to compare experiences. As noted by Forrester, there is just one source of sustainable competitive advantage in this hyper-connected world—“an obsession with understanding, connecting with and serving customers.”

Make Every Customer Count

Become a customer-centric, goal-driven enterprise with Microsoft Dynamics CRM* 2013 and the Intel® Xeon® processor E7 v2 family

Rob Shiveley
Manager, Data Center Solutions
Software and Services Group, Intel Corp.
Visualize and interact with live data to generate insights. Your sales force can compare and explore opportunities in the sales pipeline and instantly drill down to actionable information.

You can extend and scale your Microsoft Dynamics CRM 2013 BI capability by using the advanced analytics functionality that is built into SQL Server*. SQL Server 2014 running on the Intel Xeon processor E7 v2 family has demonstrated world record performance for large-scale analytics. You can use this powerful platform to combine corporate-quality analytics with easy-to-use self-service BI based on familiar tools, such as Microsoft Excel® and Microsoft SharePoint®.

Innovations such as PowerPivot and Power View complement the in-memory technologies in SQL Server 2014 and the responsive performance of servers and clients based on Intel architecture to deliver a rich, powerful, and immersive user experience (see the sidebar, “Real-Time Business Intelligence at Enterprise Scale.”)

Using SQL Server 2014 for advanced analytics also makes it easier to integrate and analyze additional data sources, including large, unstructured data sets from web logs, social networks, and other sources. As your data sets grow, your data analysts and CRM users will be able to extract increasing insight into your customers, your markets, and the factors that lead to successful outcomes.

**Real-Time Business Intelligence at Enterprise Scale**

Two things are certain about the future of CRM. One is that real-time business intelligence (BI) will play an increasingly important role. Another is that in-memory database technologies will provide the foundation for implementing real-time BI at scale.

Microsoft SQL Server® 2014 supports in-memory computing today, using a flexible approach that lets you accelerate performance for targeted processes and workloads. Customers have used these technologies in combination with servers based on the latest Intel® Xeon® processors to achieve performance gains as high as 30x for transactional workloads and as high as 10-100x for analytics workloads. With this approach, you can integrate in-memory analytics seamlessly into your Microsoft Dynamics CRM environment to enable real-time BI at enterprise scale.


You can use these processes to run phone and email campaigns, create targeted marketing lists, handle service cases, schedule appointments, upsell products and increase orders. You can also access a library of business processes on the Microsoft Dynamics Marketplace to address a wider range of challenges as you work to improve and refine your customer experiences.

**Improve Outcomes with Advanced Analytics**

According to Gartner, business intelligence and analytics are the top priority of CIOs and will remain so through 2017. Microsoft Dynamics CRM 2013 provides an array of integrated business intelligence (BI) and data visualization tools to help users find and evaluate critical information. For example, a charting engine lets users visualize and interact with live data to generate insights. Your sales force can compare and explore opportunities in the sales pipeline and instantly drill down to actionable information.

You can extend and scale your Microsoft Dynamics CRM 2013 BI capability by using the advanced analytics functionality that is built into SQL Server®. SQL Server 2014 running on the Intel Xeon processor E7 v2 family has demonstrated world record performance for large-scale analytics. You can use this powerful platform to combine corporate-quality analytics with easy-to-use self-service BI based on familiar tools, such as Microsoft Excel® and Microsoft SharePoint®. Innovations such as PowerPivot and Power View complement the in-memory technologies in SQL Server 2014 and the responsive performance of servers and clients based on Intel architecture to deliver a rich, powerful, and immersive user experience (see the sidebar, “Real-Time Business Intelligence at Enterprise Scale.”)

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Make Every Customer Count
Delight Your Customers at Every Touch Point

Marketing
Sales
Service

Optimize outcomes across all your customer engagements using Microsoft Dynamics CRM 2013 running on scalable, highly available servers powered by the Intel Xeon processor E7 v2 family.

Keep Your Mobile Employees Connected and Productive

According to IDC, the world’s mobile worker population will reach 37 percent of the total workforce by 2015. Keeping your mobile employees connected to each other, your customers, and the social networking world is essential to maximize productivity. Microsoft Dynamics CRM 2013 provides integrated support for Yammer*, Skype*, and Lync* so users have multiple channels of communication. It also provides multi-device and touch support for tablets and smart phones, with data caching for offline viewing and client-side logic for a faster, richer experience.

Tablets and Ultrabook™ 2 in 1 devices based on Intel® processors combine high-performance with flexible mobility so your employees can make the most of off-site CRM connectivity. Intel® architecture also provides advanced and consistent security technologies, all the way from the data center to your mobile client devices. Features such as hardware-enhanced data encryption and two-factor authentication provide stronger protection so you can implement mobile usage models more fully and share data more widely without sacrificing security or compliance.

Deliver Fast, Scalable, and Reliable Performance with the Intel® Xeon® Processor E7 v2 Family

Responsive performance and uninterrupted service are essential for effective CRM, and servers based on the Intel Xeon processor E7 v2 family provide an ideal hardware foundation for mission-critical deployments. These processors deliver up to 50 percent more cores and 25 percent more cache than prior-generation processors, and support up to three times more memory. A single eight-socket server provides up to 120 cores, 240 threads, and 4 terabytes (TB) of memory in Windows Server 2012 environments, to handle the heaviest enterprise workloads.

The Intel Xeon processor E7 v2 family also increases system bandwidth by up to 400 percent versus the previous generation, which helps to keep data flowing more efficiently for better performance under peak loads. Intel internal tests have confirmed the performance benefits of these improvements across a wide range of workloads, demonstrating up to two times average performance gains versus servers based on the previous-generation Intel Xeon processor E7 family.

Proven Performance at Enterprise Scale

Servers based on the Intel Xeon processor E7 v2 family are well equipped to handle the heavy demands of Microsoft Dynamics CRM 2013 in enterprise environments. Performance tests by Intel, Microsoft, Dell, and F5 Networks verify that a single instance of Microsoft Dynamics CRM* 2013 running on an eight-socket server powered by the Intel® Xeon® processor E7 v2 family can support up to 150,000 simultaneous users—and up to one million business transactions per hour—with average response times of less than half a second.

Make Every Customer Count
These results were achieved using workloads that were carefully designed to reflect those of a typical, large-scale enterprise organization. No extraordinary steps were taken to tune the solution stack. The Microsoft SQL Server 2012 database contained more than a billion records and was also running on an eight-socket server powered by the Intel Xeon processor E7 v2 family.

**Unleash Full Performance with Intel Storage Software and Intel® Solid State Drives**

To achieve sustainable high-performance, the CRM and database servers were configured with solid-state drives (SSDs) rather than traditional hard disk drives (HDDs). Additional tests showed that these SSD-only server configurations were necessary to realize the full performance potential of the server. However, in a test with 30,000 users, combining HDDs with one Intel® Solid-State Drive (Intel® SSD DC S3700) and Intel® Cache Acceleration Software (Intel® CAS) increased the average response time by 49 percent compared with the HDD-only configuration—at much lower cost than an all SDD solution.14

Based on these results, a server powered by the Intel Xeon processor E7 v2 family, configured with HDDs, Intel CAS, and a small number of Intel SSDs can deliver excellent performance for large user populations, without the expense of a full SSD storage configuration. As workloads and data demands grow, IT organizations can increase their SSD footprint as required to scale performance.


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**Provide Mission-Critical Uptime with a Rock-Solid Platform**

In today’s global marketplace, your sales and support teams need uninterrupted access to their tools and applications. For several years now, server platforms based on the Intel Xeon processor E7 family and the Windows Server® operating system have been delivering uptime levels equivalent to those of best-in-class RISC and UNIX platforms.15 The Intel Xeon processor E7 v2 family takes reliability to new heights with Intel® Run Sure Technology,16 which includes more than 40 reliability features to improve data integrity and system uptime. Intel Run Sure Technology includes:

- **Resilient Memory Technologies** that continuously scan the memory subsystem to identify errors before they corrupt data or bring down the system.
- **Resilient System Technologies** that enable the server to recover automatically from complex errors, even when they occur in the execution path or PCIe links.
- **Enhanced error log information** that provides the foundation for advanced diagnostics and predictive failure analysis using Windows Server 2012.

Intel and Microsoft have worked together to provide optimized support for these hardware features throughout the solution stack. With this foundation, you can combine high single-system reliability with advanced data protection and automated failover to deliver mission-critical data access and CRM services on one of the world’s most flexible and cost-effective computing platforms.

**Learn More**

Microsoft Dynamics CRM 2013 running on the Intel Xeon processor E7 v2 family offers a proven, high-value path to CRM excellence that can help you deliver superior customer experiences across virtually every touch point. To learn more, visit the following websites:

- Intel® Cache Acceleration Software: [www.intel.com/cas](http://www.intel.com/cas)
- Intel® Solid-State Drive: [www.intel.com/go/ssd](http://www.intel.com/go/ssd)
As of April 4, 2014, SQL Server® 2014 running on servers powered by the Intel® Xeon® processor E7 family have delivered the highest published results for the industry-standard TPC Benchmark™ H (TPC-H) for both 3 TB and 10 TB database tests, with published results of 64,837 QphH and 4,408 QphH, respectively. TPC-H is a decision support benchmark, consisting of a suite of business oriented ad hoc queries and concurrent data modifications that have been chosen to have broad industry-wide relevance. For a list of the top ten TPC-H performance results, visit the TPC website at www.tpc.org/tpch/results/tpch_perf_results.aspx. For detailed information about the workload and test configurations, visit http://www.tpc.org/3297 and http://www.tpc.org/3298. TPC Benchmark is a trademark of TPC.


• On a 4-way socket natively-connected platform: Intel® Xeon® processor E7 family supports 64x 8 GB DDR3-1600 memory (512 GB) and 64x 8 GB DDR3-1333 memory. Intel® Xeon® processor E7 v2 family supports 96x RDIMMs, max memory per DIMM of 64 GB DDR4. This enables a 3x increase in memory capacity.

• Windows Server 2012 currently supports a maximum memory capacity of 4 terabytes per physical server. The Intel Xeon E7 v2 family supports up to 6 terabytes per four-socket server and up to 12 terabytes per eight-socket server. This enables substantial headroom for expansion, which can be used if and when these limits are raised.

• Up to 4x (I/O) bandwidth claim based on Intel internal estimates of the Intel® Xeon® processor E7 v2 family performance optimized against the previous generation of Intel® Xeon® processor E7 1100 and 4900 families.

Source for claim: Intel internal measurements as of November 2013. Configuration details:


No computer system can provide absolute reliability, availability, or serviceability. Requires an Intel® Run Service Technology-enabled system, including an enabled Intel® processor and enabled technology. Built-in reliability features available on select Intel processors may require additional software, hardware, services, and/or an Internet connection. Results may vary depending upon configuration. Consult your system manufacturer for more details.

Software and workloads used in performance tests may have been optimized for specific software, hardware, services, and/or operations. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products.

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