Intel E5-2640 v3

Intel Xeon E5-2640 v3 Processor User Manual

Model: E5-2640 v3

Introduction

This manual provides essential information for the installation, operation, and maintenance of your Intel Xeon E5-2640 v3 Eight-Core Processor. The Intel Xeon E5-2640 v3 is a high-performance processor designed for server and workstation environments, offering robust computing power for demanding applications.

Please read this manual thoroughly before proceeding with installation to ensure proper setup and optimal performance.

Product Overview

Figure 1: Intel Xeon E5-2640 v3 Processor. This image displays two views of the processor: the top side with the integrated heat spreader (IHS) and the bottom side revealing the LGA 2011-3 pin array.

The Intel Xeon E5-2640 v3 processor features eight cores, a base clock speed of 2.6GHz, and 20MB of L3 cache. It is designed for the LGA 2011-3 socket and supports DDR4 memory, making it suitable for high-performance computing tasks.

Setup and Installation

1. Pre-Installation Checklist

- Compatible Motherboard (LGA 2011-3 socket)
- Compatible DDR4 RAM modules
- CPU Cooler (compatible with LGA 2011-3)
- Thermal Paste
- Anti-static wrist strap or mat
- Screwdriver (if required for cooler installation)

2. Installation Steps

1. **Prepare the Motherboard:** Ensure the motherboard is securely mounted in the chassis and all necessary power cables are disconnected. Open the CPU socket retention mechanism.
2. **Handle the Processor:** Hold the processor by its edges to avoid touching the gold contacts or the integrated heat spreader (IHS).
3. **Align the Processor:** Carefully align the triangular marker on the processor with the corresponding marker on the CPU socket. Gently lower the processor into the socket. Do not force it. If it does not seat easily, re-check alignment.

4. **Secure the Processor:** Close the CPU socket retention mechanism until it clicks into place, securing the processor.
5. **Apply Thermal Paste:** Apply a small amount of high-quality thermal paste to the center of the processor's IHS. Refer to your thermal paste manufacturer's instructions for the recommended application method.
6. **Install CPU Cooler:** Mount the CPU cooler according to its manufacturer's instructions. Ensure proper contact between the cooler's base and the processor's IHS. Connect the CPU cooler fan to the designated CPU_FAN header on the motherboard.
7. **Connect Power:** Reconnect all necessary power cables to the motherboard and other components.

Caution: *Always handle electronic components with care to prevent electrostatic discharge (ESD) damage. Use an anti-static wrist strap or frequently touch a grounded metal object.*

Operating Considerations

Once installed, the Intel Xeon E5-2640 v3 processor operates automatically within your system. Its performance is managed by the operating system and motherboard BIOS/UEFI settings.

BIOS/UEFI Configuration

After initial installation, it is recommended to enter the system's BIOS/UEFI setup to:

- Verify the processor is recognized correctly.
- Load optimized default settings.
- Configure memory settings (e.g., XMP profiles for compatible RAM).
- Monitor CPU temperature to ensure the cooler is functioning effectively.
- Update BIOS/UEFI to the latest version for optimal compatibility and performance. Refer to your motherboard manufacturer's website for instructions.

Operating System

Ensure your operating system is up-to-date with the latest patches and drivers, especially chipset drivers, to fully utilize the processor's capabilities.

Maintenance

Processors generally require minimal maintenance. However, proper thermal management is crucial for longevity and stable operation.

- **Dust Removal:** Periodically clean dust from the CPU cooler heatsink and fan using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **Thermal Paste:** If the CPU cooler is removed for any reason, the thermal paste must be cleaned off and reapplied before re-installation.
- **Airflow:** Ensure adequate airflow within the computer case by keeping cables tidy and ensuring case fans are functioning correctly.

Troubleshooting

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
System does not power on or POST.	Improper CPU installation, power connection issues, or incompatible components.	Verify CPU is seated correctly and retention mechanism is locked. Check all power connections to motherboard and CPU. Ensure motherboard BIOS is updated to support the CPU.
System powers on but no display.	CPU not fully seated, RAM issues, or graphics card issues.	Reseat the CPU. Reseat RAM modules. Ensure graphics card is properly seated and powered.
System crashes or freezes.	Overheating, unstable overclock, or driver issues.	Check CPU temperatures using monitoring software. Ensure CPU cooler is properly installed and thermal paste is applied. Reset BIOS to default settings if overclocked. Update chipset and other system drivers.

Specifications

Feature	Detail
Processor Model	Intel Xeon E5-2640 v3
Cores / Threads	8 Cores / 16 Threads
Base Clock Speed	2.6 GHz
Max Turbo Frequency	3.4 GHz
Cache	20 MB Intel Smart Cache
Bus Speed	8 GT/s QPI
Socket Type	LGA 2011-3
Memory Types Supported	DDR4
TDP	90 W
Item Weight	1 pound
Manufacturer	Intel
Date First Available	June 19, 2015

Warranty and Support

Warranty Information

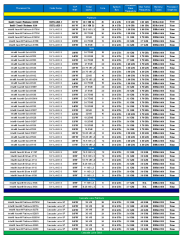
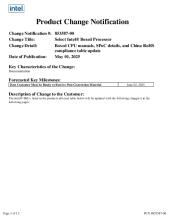
Intel processors typically come with a limited warranty. For specific warranty terms and conditions, please

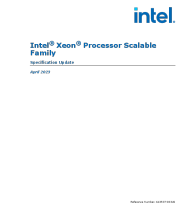
refer to the official Intel warranty documentation included with your product or visit the Intel support website. Keep your proof of purchase for warranty claims.

Technical Support

For technical assistance, troubleshooting, or further inquiries, please visit the official Intel support website or contact Intel customer service. Have your processor model number (E5-2640 v3) and any relevant system information ready when seeking support.
Intel Support Website: www.intel.com/support

Related Documents - E5-2640 v3

	Intel Xeon E5-2680 v4 Processor: User Manual and Installation Guide Detailed user manual and installation guide for the Intel Xeon E5-2680 v4 processor. Covers specifications, compatible components, installation steps, troubleshooting, and performance optimization for server and workstation environments.
	Intel Xeon CPU Support List for C621-WD12 Motherboard Find detailed specifications for Intel Xeon Platinum, Gold, Silver, and Bronze processors compatible with the C621-WD12 motherboard, including SKYLAKE-S and Cascade Lake series.
	Intel Product Change Notification 853587-00: Boxed Processor Updates Notification regarding updates to Intel Boxed Processor manuals, Single Point of Contact (SPoC) details, and China RoHS compliance tables, affecting various Intel Core and Xeon processors.
	OpenCL™ Developer Guide for Intel® Processor Graphics: Optimization and Performance This comprehensive guide offers developers detailed insights and optimization techniques for OpenCL applications targeting Intel® Processor Graphics. It covers architectural specifics, memory management, coding best practices for CPU and GPU, performance analysis, and multi-device strategies.

	Intel® Xeon® Processor Scalable Family Specification Update - April 2023 This document provides a comprehensive update for the Intel® Xeon® Processor Scalable Family, detailing errata, specification changes, clarifications, and documentation updates released in April 2023. Essential for hardware manufacturers and software developers.
	Intel® Xeon® 6 SoC: Enhanced Performance for Networking and Edge Explore the Intel® Xeon® 6 SoC, formerly codenamed Granite Rapids. Discover its advanced features, integrated accelerators, and scalable architecture designed for high-performance networking, edge computing, AI, and media workloads. Learn about its TCO improvements and suitability for various market segments.