

Intel BX80621E52690

Intel Xeon E5-2690 Processor Instruction Manual

Model: BX80621E52690

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your Intel Xeon E5-2690 processor. Designed for high-performance computing environments, this 8-core processor offers robust capabilities for demanding applications. Please read these instructions carefully before proceeding with installation.

2. PRODUCT OVERVIEW

The Intel Xeon E5-2690 is an 8-core processor operating at 2.9 GHz, featuring a 20MB L3 Cache and a 135W Thermal Design Power (TDP). It supports DDR3 memory up to 1600 MHz and is designed for the LGA 2011 socket.

- **Processor Cores:** 8
- **Base Clock Speed:** 2.9 GHz
- **L3 Cache:** 20MB
- **Thermal Design Power (TDP):** 135W
- **Memory Support:** DDR3 up to 1600 MHz
- **Socket Type:** LGA 2011



Figure 2.1: Intel Xeon E5-2690 Processor. This image displays the top view of the processor, showing the integrated heat spreader (IHS) and Intel branding.

3. SETUP AND INSTALLATION

Proper installation is crucial for the stability and performance of your system. Ensure your motherboard supports the LGA 2011 socket and the Intel Xeon E5-2690 processor.

3.1. Before You Begin

- **Compatibility:** Verify your motherboard's compatibility with the Intel Xeon E5-2690 (LGA 2011 socket). Refer to your motherboard's manual.
- **Static Electricity:** Take anti-static precautions (e.g., use an anti-static wrist strap) to prevent damage to components.
- **Tools:** Gather necessary tools, including a Phillips head screwdriver and thermal paste.
- **Cooling Solution:** Ensure you have a compatible CPU cooler for the LGA 2011 socket, capable of dissipating 135W TDP.

3.2. Installation Steps

1. **Prepare Motherboard:** Open the CPU socket retention mechanism on your LGA 2011 motherboard. This typically involves releasing two levers.
2. **Orient Processor:** Carefully align the processor with the socket. The processor has notches that correspond to keys on the socket. Do not force the processor into place.
3. **Seat Processor:** Gently lower the processor into the socket. It should sit without resistance.
4. **Secure Processor:** Close the socket retention mechanism by pushing down the levers until they lock into place.
5. **Apply Thermal Paste:** Apply a small amount of high-quality thermal paste to the center of the processor's Integrated Heat Spreader (IHS). Consult the thermal paste manufacturer's instructions for the recommended application method.
6. **Install CPU Cooler:** Mount your compatible CPU cooler according to its manufacturer's instructions. Ensure it makes firm, even contact with the processor's IHS.
7. **Connect Fan:** Connect the CPU cooler's fan cable to the designated CPU_FAN header on your motherboard.



Figure 3.1: Intel Xeon E5-2690 Processor (bottom view). This image shows the pin array on the underside of the processor, which interfaces with the LGA 2011 socket.

4. OPERATING INSTRUCTIONS

Once the processor is installed and the system is assembled, you can power on your computer. The operating system will detect the new hardware. Ensure all necessary drivers are installed for optimal performance.

4.1. System Requirements

- **Motherboard:** LGA 2011 socket compatible.
- **RAM:** DDR3 ECC or non-ECC memory, up to 1600 MHz, as supported by your motherboard.
- **Power Supply:** A power supply unit (PSU) with sufficient wattage to power all system components, including

the 135W TDP processor.

- **Operating System:** Compatible with Intel Xeon processors (e.g., Windows Server, Linux distributions, Windows Pro editions).

4.2. Typical Usage

The Intel Xeon E5-2690 processor is ideal for:

- Workstations requiring high multi-core performance for tasks like video editing, 3D rendering, and scientific simulations.
- Servers handling virtualization, databases, and other demanding server applications.
- High-performance computing (HPC) clusters.

5. MAINTENANCE

Regular maintenance helps ensure the longevity and stable operation of your processor and system.

- **Thermal Management:** Periodically check CPU temperatures using monitoring software. Ensure your CPU cooler is free of dust and debris. Clean fan blades and heatsink fins as needed with compressed air.
- **Airflow:** Maintain good airflow within your computer case. Ensure case fans are functioning correctly and cables are managed to avoid obstructing airflow.
- **BIOS/UEFI Updates:** Keep your motherboard's BIOS/UEFI firmware updated to ensure optimal compatibility and performance with your processor. Refer to your motherboard manufacturer's website for updates and instructions.
- **Driver Updates:** Ensure all system drivers, especially chipset drivers, are up to date.

6. TROUBLESHOOTING

If you encounter issues, consider the following basic troubleshooting steps:

- **No Power/No Boot:**
 - Verify all power cables are securely connected (24-pin ATX, 8-pin EPS/CPU power).
 - Ensure the CPU is correctly seated in its socket.
 - Check for bent pins on the CPU or in the socket *(only if CPU was removed)*.
- **Overheating:**
 - Confirm the CPU cooler is properly installed and making good contact with the processor.
 - Check if thermal paste was applied correctly.
 - Ensure CPU cooler fan is spinning and heatsink is clean.
 - Verify adequate case airflow.
- **System Instability/Crashes:**
 - Check RAM modules for proper seating and compatibility.
 - Update motherboard BIOS/UEFI and chipset drivers.
 - Run diagnostic tools to check for hardware errors.
- **BIOS/UEFI Not Detecting CPU:**
 - Ensure your motherboard's BIOS/UEFI version supports the E5-2690 processor. An update may be required (often needs a compatible CPU to perform).

For more advanced diagnostics, consult your motherboard's manual for specific POST codes or diagnostic LEDs.

7. SPECIFICATIONS

Feature	Detail
Processor Model	Intel Xeon E5-2690
Item Model Number	BX80621E52690
CPU Cores	8
Base Clock Speed	2.9 GHz
L3 Cache	20 MB
Thermal Design Power (TDP)	135 W
CPU Socket	LGA 2011
Memory Support	DDR3 up to 1600 MHz
Item Weight	4 ounces
Product Dimensions (LxWxH)	4.9 x 2 x 1.8 inches
Manufacturer	Intel

8. WARRANTY AND SUPPORT

For warranty information and technical support regarding your Intel Xeon E5-2690 processor, please refer to the official Intel website or contact Intel customer service.

Important Note: Specific purchase terms, such as "No refunds, no returns, no exchanges. FINAL SALE," may apply depending on your retailer. These terms are separate from Intel's official product warranty. Always review the terms and conditions provided by your point of purchase.

You can find comprehensive support resources, including drivers, software, and troubleshooting guides, on the official Intel support portal:

[Intel Processor Support](#)