

Kontron CG1200 Carrier Grade Server

Tested Hardware and Operating System List



Revision 1.1

August 2014

Revision History

Revision History

Date	Revision Number	Modifications
November 2012	1.0	Initial Release
August 2014	1.1	Added Intel SSD HD S3500 Series because 520 Series is EOL.

Disclaimers

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1. Introduction

This document is intended to provide users of the **Kontron CG1200 Carrier Grade Server** with a list of the operating systems, adapter cards, and peripherals tested by Kontron on this server platform. The **CG1200** is integrated using the Intel® Server Board S2400EP4.

This document will continue to be updated as new adapters, peripherals, and operating systems are tested or until the **CG1200** is no longer in production. Each new release of the document will present updated information as well as continue to provide the information from previous releases.

Kontron will provide support for the adapters and peripherals listed when used within this family of products.

The **CG1200** product family consists of the following server building blocks and integrated systems. Refer to the **CG1200** Configuration Guide for more details.

Product Code	Product Description
CG1200A-00	CG1200 Model 0 with AC Power Supply
CG1200D-00	CG1200 Model 0 with DC Power Supply

1.1 Test Overview

Testing performed on the **CG1200** is divided under two separate categories:

- Basic Operating System Installation Testing
- Adapter/Peripheral Compatibility testing and System Stress Testing.

1.1.1 Basic Installation Testing

Basic installation testing is performed with each supported operating system. Basic installation testing validates that the server board can install the operating system and that the base hardware feature set is functional. A small set of peripherals is used for installation purposes only. No add-in adapter cards are tested. Testing includes network connectivity and running of proprietary and industry standard test suites.

⇒ *The latest version of an operating system signifies the latest supported version at the time of the actual test run. Each new release of this document may have a newly supported release of a given operating system. Previous releases of a supported operating system may not be tested beyond the basic installation test process.*

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1.1.1.1 Support Commitment for Basic Installation Testing

Kontron commits to provide the following level of customer support for operating systems that receive only basic installation testing:

- Kontron will provide and test operating system drivers for each of the server board's integrated controllers, provided that the controller vendor has a driver available upon request. Vendors will not be required by Kontron to develop drivers for operating systems that they do not already support. This may limit the functionality of certain server board integrated controllers.
- Kontron will support customer issues that involve installation and/or functionality of operating system with the server board's integrated controllers only if a driver has been made available.
- Kontron will NOT provide support for issues related to use of any add-in adapters or peripherals installed in the server system when an operating system that received basic installation testing only is in use.
- Support is defined as assistance in root causing issues, and determining a customer acceptable resolution to the issue associated with the operating system. The resolution may include, but is not limited to, on-board controller driver changes, engaging the vendor for resolution, BIOS changes, firmware changes, or determining a customer acceptable workaround for the issue.

1.1.2 Adapter/Peripheral Compatibility and Stress Testing

Adapter/Peripheral Compatibility and Stress testing is performed only on the most current release of a supported operating system at the time of a given validation run. The Adapter/Peripheral Compatibility and Stress testing process consists of three areas: Base Platform, Adapter Compatibility, and Stress.

Base Platform: Each base platform will successfully install a given operating system, successfully run a disk stress test, and successfully run a network stress test.

Adapter Compatibility: Adapter compatibility validation (CV) testing uses test suites to gain an accurate view of how the server performs with a wide variety of adapters under the primary supported operating systems. These tests are designed to show hardware compatibility between the add-in cards and the server platform and include functional testing only. No heavy stressing of the systems or the cards is performed for CV testing.

Stress Testing: This test sequence uses configurations that include add-in adapters in all available PCI slots for a minimum 72-hour test run without injecting errors. Each configuration passes an installation test, a Network/Disk Stress test, and tape backup test. Any fatal errors that occur will require a complete test restart.

1.1.2.1 Support Commitment for Adapter/Peripheral Compatibility and Stress Testing

Kontron commits to provide the following level of customer support for operating systems that receive Adapter/Peripheral Compatibility and Stress testing:

- Kontron will provide support for customer issues with these operating systems involving installation and/or functionality of the server board with or without the adapters and peripherals listed in this document as having been tested under the particular operating system.
- Support is defined as assistance in root causing issues, and determining a customer acceptable resolution to the issue associated with the operating system. The resolution may include, but is not limited to, on-board controller driver changes, engaging the vendor for resolution, BIOS changes, firmware changes, or determining a customer acceptable workaround for the issue.

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- Kontron will provide and test operating system drivers for each onboard video, network, and storage controller.
- Kontron will enable vendors to provide driver support for add-in adapters using these operating systems.
- Kontron will go through some of the steps to achieve certification to ensure its customers do not run across any problems, but the actual certification is the responsibility of the individual customer.

⇒ *For operating systems, adapter cards, and peripherals not listed in this document, there is no support commitment. Kontron will consider support requests on a case-by-case basis*

1.2 Pass/Fail Test Criteria

For each operating system, adapter, and peripheral configuration, a test passes if specific criteria are met. Specific configurations may have had particular characteristics that were addressed on a case-by-case basis. In general, a configuration passes testing if the following conditions are met:

- The operating system installed without error.
- Manufacturer's installation instructions or Kontron's best-known methods were used for the operating system installation.
- No extraordinary workarounds were required during the operating system installation.
- The server system behaved as expected during and after the operating system installation.
- Application software installed and executed normally.
- Hardware compatibility tests ran to completion without error.
- Test software suites executed successfully
- Test and data files were created in the correct directories without error.
- Files copied from client to server and back compare to the original with zero errors reported.
- Clients remain connected to the server system.
- Industry standard test suites run to completion with zero errors reported.

2. Base System Definitions

The following table lists the base system configurations tested for a given validation test run. Each specific product/system software combination tested is assigned a Base System Identifier Number. These numbers are used in the lists of supported adapters and peripherals referenced in the following sections.

The adapters and peripherals specified in this document may or may not have been tested on all available board/riser combinations that make up the **CG1200** product family. However, Kontron will provide support for the adapters and peripherals listed when used within this family of products

This table is updated when a new test run is performed and a new product/system software combination was used.

Kontron will only provide support for adapters and peripherals under the specified operating systems versions with which they were tested. The latest version of an operating system signifies the latest supported version at the time of the actual test run. Each new release of this document may have a newly supported release of a given operating system. Previous releases of a supported operating system may not be tested beyond the basic installation test process.

Base System Configuration Identifier #	Board type	PBA Number	BIOS Revision	BMC Firmware Revision	ME Firmware Revision	FRU/SDR Revision	Notes
1	S2400EP4	G55294-202	01.05.0001	1.14	02.01.05.1070	0.02	Beta SUP 02

3. Supported Operating Systems

The following table provides a list of supported operating systems for the **CG1200**. Each of the listed operating systems was tested for compatibility with the Intel® Server Board **S2400EP4** in the base system configurations listed in section 2 of this document. Operating systems are supported only with the specified base system configuration(s) with which they were tested.

The following table also indicates whether each operating system received Basic Installation testing, or Adapter/Peripheral Compatibility and Stress testing. For information on the support commitments for Basic Installation Testing vs. Adapter/Peripheral Compatibility and Stress Testing, please reference Section 1 of this document.

Any variations to the standard operating system installation process are documented in the Installation Guidelines section of this document. If no installation guidelines are present in the following table, then the operating system installed as expected using manufacturer's installation instructions or Kontron's best-known methods.

Operating System	Base System Configuration Tested / Type of Testing	Notes
Microsoft Windows* Server 2008 R2 64-bit	1 / Compatibility & Stress	
Red Hat* Linux ES 6.2 32-bit & 64-bit	1 / Compatibility & Stress	
SUSE* Linux Enterprise Server 11 SP2 32-bit and 64-bit	1 / Compatibility & Stress	
Wind River Linux 3.0.2	1 / Basic Install	
Wind River Linux 4.3	1 / Compatibility & Stress	

3.1 Operating System Certifications

Listed below are the operating systems that Kontron will certify with the **CG1200**. However, the customer is responsible for their own certification from the individual operating system vendors. In many cases, the customer may leverage their operating system certifications from Kontron’s testing. See the “Comments” section next to each operating system in the table below for additional information. Kontron’s certifications, pre-certification, and operating system testing may help reduce some of the risk in achieving customer certifications with the operating system vendors.

Operating System	Certification Listing	Comments
Microsoft Windows Server 2008 R2 64-bit	Kontron CG1200 Carrier Grade Server	OEM must request certification by Microsoft for their specific product. URL – http://www.windowsservercatalog.com/
Red Hat Linux ES 6.2 32-bit and 64-bit	Kontron CG1200 Carrier Grade Server	Red Hat checks Kontron’s results, certifies (if appropriate), and posts the certificate on https://hardware.redhat.com/list.cgi?product=Red+Hat+Hardware+Certification&quicksearch=kontron Customers can leverage the Kontron certification, if customer product meets the operating system vendor standard.
SUSE Linux Enterprise Server 11 SP2 32-bit and 64-bit	Kontron CG1200 Carrier Grade Server	https://www.suse.com/nbswebapp/yesBulletin.jsp?bulletinNumber=138606 https://www.suse.com/nbswebapp/yesBulletin.jsp?bulletinNumber=138607
Wind River Linux 3.0.2, 4.3	Kontron CG1200 Carrier Grade Server	http://crms.kontron.com/tools/windriver.htm

4. Adapters and Peripherals

Add-in adapter card and peripheral compatibility and stress testing will only be performed with the latest version of an operating system at the time the validation testing occurred. The following table shows the operating system and base system configurations used to validate each device. The adapters are divided into categories based on their functionality. All integrated on-board devices are tested by default and are therefore not included in the following tables.

Note that not all adapter cards were tested under all operating systems. The following notations are used in the tested adapters and peripherals table below to indicate the support level that Kontron provides for a particular adapter under a particular operating system:

Number (i.e. 1)	This adapter or peripheral has been tested and is supported under the specific configuration identified in the Base System Configurations Table in Section 2 of this document.
Number in brackets (i.e. [1])	This adapter or peripheral has been tested, but is NOT supported under the specific configuration identified in the Base System Configurations Table in Section 2 of this document.
NT	This adapter or peripheral has not been tested under this operating system and is not supported under this operating system.
ND	This adapter or peripheral has not been tested under this operating system due to limitations in driver availability, and is not supported under this operating system.
SA (Similar Adapter) Referenced in the "Comments" column for each adapter that is supported but not tested.	This adapter is supported, but not tested. This adapter model has not been tested with this server board, but Kontron will support it based on successful testing of a similar adapter from the same adapter family. Kontron has high confidence that this adapter will function correctly with the server board. This adapter uses the same firmware and drivers, and has a nearly identical system interface to another adapter of the same family that has been successfully tested with this server board. Customers should always test adapters as part of the final system configuration prior to deployment. All installation guidelines for the tested adapter also apply to the similar adapter.

Any variations to the standard adapter installation process or to expected adapter functionality are documented in the Installation Guidelines section of this document. If there are installation guidelines affecting a particular adapter and operating system combination, these are referenced in the following table. If there are no installation guidelines noted in the following table, then the adapter installed and functioned as expected using manufacturer's installation instructions or Kontron's best-known methods.

⇒ *Testing of adapters cards normally is performed with unused add-in adapters and onboard controller expansion ROMs disabled in BIOS Setup. Kontron recommends that customers disable the option ROM for add-in controllers and/or the on-board controllers when not booting from the controller or needing to use its built in utilities.*

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Manufacturer	Model Number	Model Name	Interface	Comments	Microsoft Windows 2008 R2 64-bit	Red Hat Enterprise Linux 6.2 32-bit	Red Hat Enterprise Linux 6.2 64-bit	WindRiver Linux 4.3	WindRiver Linux 3.0.2	SUSE Enterprise Linux 11 SP2 32-bit	SUSE Enterprise Linux 11 SP2 64-bit
4.1 RAID Controllers											
Intel	IOC	RMS25JB040	PCI Express 3.0	SW RAID 0/1/10 LSI2308 Value RAID	1	1	1	1	1	1	1
Intel	ROC	RMS25CB040	PCI Express 3.0	HWRAID 0/1/5/10 LSI 2208 Enterprise RAID	1	1	1	1	1	1	1
4.2 Network Interface Controllers (NICs)											
Intel	E1G42ET	Gigabit ET Dual Port Server Adapter	PCI Express 2.0	2 port, RJ-45, 10/100/1000 Mbps. Intel 82576 – <i>(Requires Version 17 or later Intel ProSet NIC drivers for Windows 2008 R2)</i>	1	1	1	1	1	1	1
Intel	E1G44ET2	Gigabit ET2 Quad Port Server Adapter	PCI Express 2.0	4 port, RJ-45, 10/100/1000 Mbps. Intel 82576	1	1	1	1	1	1	1
Intel	I350T4	Ethernet Server Adapter I340-T4	PCI Express 2.0	4 port, RJ-45; Intel I350-AM2. 10/100/1000 Mbps	1	1	1	1	1	1	1
Intel	EXPI9402PT	Pro/1000 PT Dual Port Server Adapter	PCI Express 2.0	2 port, RJ-45, 1GbE, 82571GB chipset	1	1	1	1	1	1	1
Intel	E10G42BFSR	Ethernet Server Adapter X520-SR2	PCI Express 2.0	2 port, SFP+fiber (SR), 10GbE Intel 82599, Virtualization, FCoE	1	1	1	1	1	1	1

Manufacturer	Model Number	Model Name	Interface	Comments	Microsoft Windows 2008 R2 64-bit	Red Hat Enterprise Linux 6.2 32-bit	Red Hat Enterprise Linux 6.2 64-bit	WindRiver Linux 4.3	WindRiver Linux 3.0.2	SUSE Enterprise Linux 11 SP2 32-bit	SUSE Enterprise Linux 11 SP2 64-bit
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4.3 Deep Packet Capture Adapters

Napatech	NT20E-NEBS	NT20E-NEBS	PCI Express 2/0	2 port 10GbE NIC Fiber, XFP, for Deep Packet Capture	1	1	1	1	1	1	1
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4.4 USB Devices

Memorex	32509097	8GB Travel Drive	USB 2.0	8GB USB Flash Drive	1	1	1	1	1	1	1
Sandisk	SDCZ50-002G-A11	2GB Cruzer Blade Flash Drive	USB 2.0	2GB USB Flash Drive	1	1	1	1	1	1	1
Sandisk	SDCZ50-004G-A11	4GB Cruzer Blade Flash Drive	USB 2.0	4GB USB Flash Drive	1	1	1	1	1	1	1
Sandisk	SDCZ50-008G-A11	8GB Cruzer Blade Flash Drive	USB 2.0	8GB USB Flash Drive	1	1	1	1	1	1	1
Sandisk	SDCZ50-016G-A11	16GB Cruzer Blade Flash Drive	USB 2.0	16GB USB Flash Drive	1	1	1	1	1	1	1
Kingston	SD4/4GB	4GB SD Flash Module	USB 2.0	4GB SD Flash Module	1	1	1	1	1	1	1

4.5 eUSB Flash Drives

Smart Modular	SG9ED52M4GPAKON	4GB eUSB Flash Drive	USB 2.0	4GB eUSB Flash Drive	1	1	1	1	1	1	1
Smart Modular	SG9ED52M8GPBTKON	8GB eUSB Flash Drive	USB 2.0	8GB eUSB Flash Drive	1	1	1	1	1	1	1
Viking	VRFDUC3L4096CHK6	4GB eUSB Flash Drive	USB 2.0	4GB eUSB Flash Drive	1	1	1	1	1	1	1
Viking	VRFDUC3L8192CHK3	8GB eUSB Flash Drive	USB 2.0	8GB eUSB Flash Drive	1	1	1	1	1	1	1

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Manufacturer	Model Number	Model Name	Interface	Comments	Microsoft Windows 2008 R2 64-bit	Red Hat Enterprise Linux 6.2 32-bit	Red Hat Enterprise Linux 6.2 64-bit	WindRiver Linux 4.3	WindRiver Linux 3.0.2	SuSE Enterprise Linux 11 SP2 32-bit	SuSE Enterprise Linux 11 SP2 64-bit
4.6 Input Devices											
Logitech	K200	K200	USB 2.0	Keyboard	1	1	1	1	1	1	1
Microsoft	Wired Desktop 600	APB-00001	USB 2.0	Keyboard	1	1	1	1	1	1	1
Microsoft	Intellimouse	Intellimouse 3.0	USB 2.0	Optical Mouse	1	1	1	1	1	1	1
4.7 SATADOM											
Innodisk	DESIH-08GJ30AC1QSF	8GB SATADOM	3Gbps	8GB SATADOM	1	1	1	1	1	1	1

5. Hard Disk Drives

The hard drives listed in the following table have been tested with the server board integrated into the **CG1200** by Kontron in its validation labs and/or by individual drive vendors. The following operating system identifiers are used in the table to specify which OS each drive was tested under.

Identifier number/ Base Configuration	Operating System
1	Microsoft Windows Server 2008, Enterprise Edition, R2, 64-bit
2	SuSE Linux Enterprise Server 11 SP2 – 32bit
3	SuSE Linux Enterprise Server 11 SP2 – 64bit
4	Red Hat Enterprise Linux 6 Update 2 – 32bit
5	Red Hat Enterprise Linux 6 Update 2 – 64bit
6	Wind River Linux 3.0.2
7	Wind River Linux 4.3

Note: For the definition of the *Base Configuration* number see the table describing the *Base System Configuration Identifier #* in section two of this document.

Note that not all hard drives were tested under all operating systems. The following notation is used in the tested hard drives table below to indicate the support level that Kontron provides for a particular hard drive with a particular operating system:

Number (i.e. 1)	This hard drive has been tested and is supported under the operating system identified by the operating system identification number.
Number in brackets (i.e. [1])	This hard drive has been tested, but is NOT supported under the operating system identified by the operating system identification number.
SD (Similar Drive)	The hard disk drive is supported, but not tested. This hard drive model/capacity has not been tested with this server board, but Kontron will support it based on successful testing of a larger capacity hard drive from the same hard drive family. Kontron has high confidence that this hard drive will function correctly with the server board. This drive uses the exact same firmware and drivers as a larger capacity hard drive that has been successfully tested with this server board. The only difference between this drive and the one that was used in testing is the storage capacity. Kontron provides the same level of support for all hard drives listed in this document, regardless of whether the drive was tested or not. Customers should always test hard drives as part of the final system configuration prior to deployment. Given the fact that a larger capacity hard drive from the same drive family has successfully completed testing on this server board, this particular hard drive capacity point will not be tested.
IHVT (IHV Tested)	The hard disk drive was tested according to Kontron-approved guidelines and test procedures by the Independent Hardware Vendor (IHV) that manufactured the drive. Kontron provides the same level of support for all hard drives listed in this document, regardless of whether the drive was tested in an Kontron lab or not. IHV test reports remain the property of the IHV (Kontron cannot provide copies of these reports).

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Manufacturer	Model Number	Product Family	Interface	RPM	Drive size GB/Inches	Tested Operating Systems	Notes
SAS Hard Drives							
Seagate	ST91000640SS	Constellation.2	SAS-600	7.2K	1 TB / 2.5	1,2,3,4,5,6,7	0002 fw validated
Seagate	ST9900805SS	Savvio 10K.5	SAS-600	10K	900 GB / 2.5	1,2,3,4,5,6,7	0002 fw validated
Seagate	ST9600205SS	Savvio 10K.5	SAS-600	10K	600 GB / 2.5		SD
Seagate	ST9450405SS	Savvio 10K.5	SAS-600	10K	450 GB / 2.5		SD
Seagate	ST9300605SS	Savvio 10K.5	SAS-600	10K	300 GB / 2.5		SD
Hitachi	HUC103014CSS600	Ultrastar C10K300	SAS-600	10K	147GB / 2.5	1,2,3,4,5,6,7	
Toshiba	MBF2600RC	MBF Series	SAS-600	10K	600GB / 2.5	1,2,3,4,5,6,7	
Toshiba	MBF2450RC	MBF Series	SAS-600	10K	450GB / 2.5		SD
Toshiba	MBF2300RC	MBF Series	SAS-600	10K	300GB / 2.5		SD
Seagate	ST9300653SS	Savvio 15K.3	SAS-300	15K	300 GB / 2.5	1,2,3,4,5,6,7	0002 fw validated
Seagate	ST9146853SS	Savvio 15K.3	SAS-300	15K	146 GB / 2.5	1,2,3,4,5,6,7	0002 fw validated
Hitachi	HUC151414CSS600	Ultrastar C15K147	SAS-600	15K	147GB / 2.5	1,2,3,4,5,6,7	
Manufacturer	Model Number	Product Family	Interface	RPM	Drive size GB/Inches	Tested Operating Systems	Notes
SATA Solid State Drives							
Intel	SSDSC2CW480A310	520 Series	SATA 6Gbps	N/A	480GB / 2.5	1,2,3,4,5,6,7	EOL
Intel	SSDSC2CW240A310	520 Series	SATA 6Gbps	N/A	240GB / 2.5		SD/EOL
Intel	SSDSC2CW120A310	520 Series	SATA 6Gbps	N/A	120GB / 2.5		SD/EOL
Intel	SSDSC2BB80G4	S3500 Series	SATA 6Gbps	N/A	80GB / 2.5 & 1.8		IHV
Intel	SSDSC2BB120G4	S3500 Series	SATA 6Gbps	N/A	120GB / 2.5		IHV
Intel	SSDSC2BB160G4	S3500 Series	SATA 6Gbps	N/A	160GB / 2.5		IHV
Intel	SSDSC2BB240G4	S3500 Series	SATA 6Gbps	N/A	240GB / 2.5 & 1.8		IHV
Intel	SSDSC2BB300G4	S3500 Series	SATA 6Gbps	N/A	300GB / 2.5		IHV
Intel	SSDSC2BB480G4	S3500 Series	SATA 6Gbps	N/A	480GB / 2.5		IHV
Intel	SSDSC2BB600G4	S3500 Series	SATA 6Gbps	N/A	600GB / 2.5		IHV
Intel	SSDSC2BB800G4	S3500 Series	SATA 6Gbps	N/A	800GB / 2.5 & 1.8		IHV

6. Installation Guidelines and Test Notes

6.1.1 Windows 2008 R2 with 3rd party NICs installed

It is important to update all 3rd Party Network Interface Controllers to the latest available drivers during the installation of Windows. Using the default drivers could cause intermittent high CPU utilization across multiple cores, causing your system to perform extremely slow or hang.