



# Installing the CGDS - Substation Workbench Server Hardware

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CGDS – Substation Workbench Release 1.0 consists of software for a server and software for a client application. The server portion can run on any server that is validated for the CGDS application. At this time, Cisco has certified two server platforms that meet the sizing and performance requirements of the CGDS Substation Workbench server software.

The first server is manufactured by Advantech (UNO 4683) and is a hardened substation server platform. This means that its construction is optimized for harsh operating environments that are likely to exist within an electrical substation. This server has been certified to be both IEEE 1613 and IEC 61850 compliant. This server is cooled by the free flow of air around the circuitry.

The second server option is manufactured by Cisco (UCS C220) and does not carry the same hardening, such as IEEE 1613 or IEC 61850 compliance. This server platform is designed to perform reliably in an engineering office, data center, or may also be an option within temperature controlled substations. It offers flexibility and power that meet the demand of processing data that arrives from one or more remote substations,

- The Advantech UNO 4683 uses an Intel® 7 2.0 GHz processor.
- The Cisco UCS C220 M3 High-Density Rack Server (Small Form Factor Disk Drive Model) uses either one or two Intel® E5-2600 series CPUs, and an Intel® C600 series chipset.



### Note

More detail about the characteristics and performance of these two servers is available in the CGDS - Substation Workbench Data Sheet (Document part Number 78-21159-01).

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# Unpacking and Inspecting the Server

This section provides some guidelines for successful installation of physical server hardware.

As soon as possible after delivery, and before applying power to the server, check the server for damage in shipping:

- Examine the chassis for signs of stress or bending.
- Look for scratches that may indicate careless handling.
- Compare the parts that come from the box with the packing list, and immediately report discrepancies.
- Finally, move the server rapidly while holding it above the table or workbench, and attempt to detect if anything has gone loose or has broken off internally during shipping.

**Note**

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Save the packing material and shipping crate in case you ever need to return the server to Cisco or the Cisco Partner which sold it to you.

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If the chassis covers can be accessed, temporarily remove them and examine the server:

- Look for loose printed wiring assemblies (circuit boards), loose screws, or other items which have become unsecurely attached in transit.
- If the server has a fan, examine it for smooth operation. Verify that no wires within the chassis are within the path of moving fan blades.

**Caution**

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When handling internal server components, wear an ESD strap and handle modules by the carrier edges only.

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- Record information about the server while it is easily accessible, and keep it in a secure place that is readily accessible. Among this information you should gather:
  - Invoice number of manufacturer (see the packing slip)
  - Invoice number of the shipper
  - Server model and serial number
  - Description of any damages encountered during the inspection

Replace all covers and secure them.

**Note**

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For further details about the exact composition of each server shipment, see the manual that comes with each the server.

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# General Installation and Safety Instructions

1. Read all instructions carefully. Remember to read the manuals that come with the server itself. Keep manuals for later reference.
2. Put servers and equipment on reliable surfaces during installation. Dropping or letting equipment fall may cause damage.
3. Keep the server in a controlled environment or shelter. Protect the server from humidity, precipitation, and from extremes in temperature.
4. Disconnect the server from any AC outlet before cleaning. Do not spray liquids or cleaning aerosols on the server. Spray a cloth and wipe the server with it
5. Protect the equipment from overheating. Openings on the server enclosure are for air convection and cooling. Do not cover the openings.
6. Position the power cord and network cables so that people cannot step or trip on them. The electrical outlet should be located near the server, and should be visible and unobstructed. If a DC power source is used, install an approved circuit breaker in the power supply line to provide quick emergency disconnect.
7. Observe applicable local and international standards for electrical service, as well as for bonding and grounding (earthing).
8. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
9. Observe all cautions and warnings printed on the equipment.

**Note**

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Due to the sensitive nature of the equipment it must be stored and operated in a restricted access location, only accessible by qualified engineers.

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# General Service Instructions

**Caution**

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The equipment should be opened only by qualified service personnel.

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If one of the following situations arises, get the equipment checked by service personnel:

- The power cord or plug is damaged.
- Liquid has penetrated into the equipment.
- The equipment has been exposed to moisture.
- The equipment does not work well, or you cannot get it to work according to the user's manual.
- The equipment has been dropped and damaged.
- The equipment has obvious signs of breakage.
- Use approved anti-static measures while servicing this equipment.

To avoid electrical shock, always disconnect the power from the server before you work on it.

Don't touch any components on the CPU card or other cards while the server is on.

Always replace batteries with the same of equivalent type recommended by the manufacturer. Use the procedures outlined in the server manual. Discard used batteries in an environmentally approved manner.



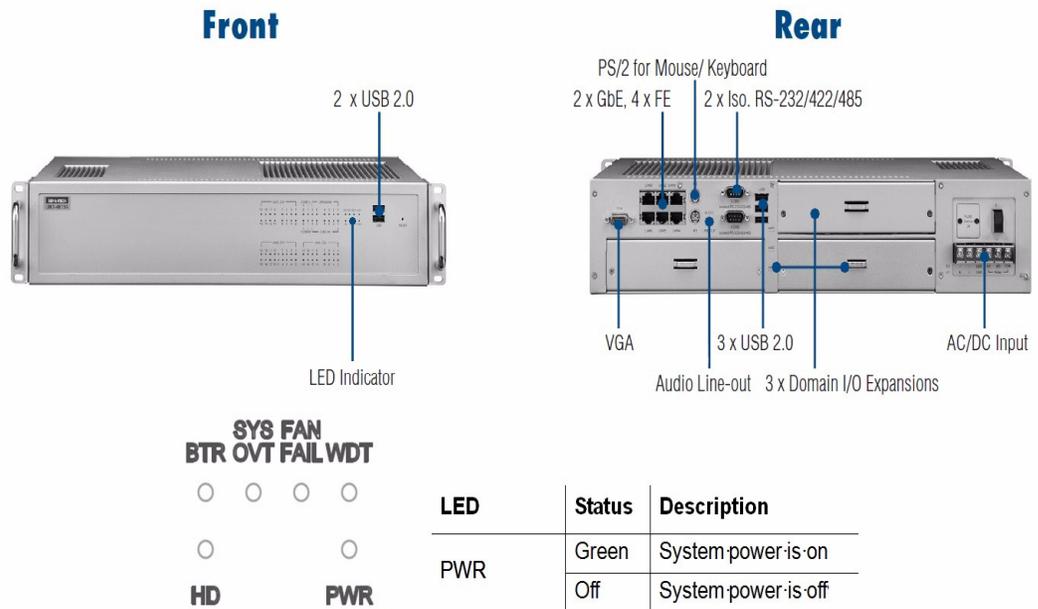
**Note**

Disconnect power before making any configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components unless the component or module is specifically designed for “hot push /hot pull” operations.

## Powering Up the CGDS Server

After the server is check, mounted, and cabled into place, it is time to apply power. This section will provide the layout of basic front and rear panel indicators for each server. This will allow you to verify that the server is operational.

### Hardened Server Indicators and Controls



# Non-Hardened Server Indicators and Controls

Figure 1-1 Cisco CGDS C220 Server Front Panel Features

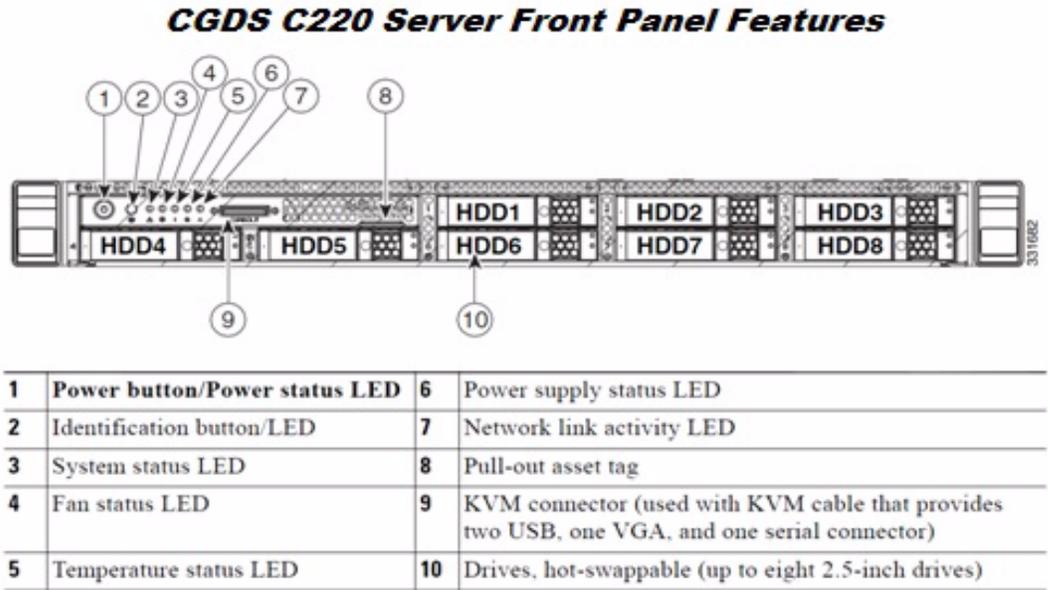


Figure 1-2 Cisco CGDS C220 Server Front Panel Features

