GigaCID User Guide
For use with GigaCID Hardware

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Change Log

Revision	Revision History	Date
-	Initial Release	2/23/2016
A	Added .Net 2.0 in System Requirements section	03/29/2016
B	Added Automatic Allocation, customizable simulated MicroCID firmware ID; updated supported cartridge list	03/15/2017
C	Updated supported cartridge list	03/18/2017
D	Updated to improve description for changing network parameters; added Appendix A	01/08/2018
E	Updated system requirements for KB3033929	02/15/2018
F	Updated auto-allocation text for ignoring cartridge BIT option	02/23/2018
G	Added note about System Check	03/14/2018
H	Added Windows 10 requirements	07/30/2018
I	Updated deployment decision information	9/18/2018
J	Corrected storage/operating temperature information	12/20/2018
K	Added DFARS statement	02/10/2022
L	Added Export and Proprietary Information Statements. Updated company name.	02/23/2022
M	Added footer. Added additional commands for new GigaCID release. Removed support for Win7/WinXP.	08/11/2022
N	Updated images and text to replace allocate to connect. For admin console versions older than 2.5.0.10, refer to older manual.	09/08/2023

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Getting Started

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Product Specifications

Spec	
Size	12" L x 7" W x 4.875" H (304 mm x 178 mm x 124 mm)
Chassis Weight	6.6 lbs. (3 kg)
Operating Temp	0 to +40 C (+32 to +104 F)
Storage Temp	-40 to +70 C (-40 to +158 F)
Humidity	0% to 95% non-condensing
Power	100/240 VAC 50/60Hz Max Current 1.5A Fuse 250V/T2A

Product Contents

- GigaCID Chassis
- Power Cable
- User Guide
- GigaCID Admin Console/Drivers

Notes

Warning:

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Power Cords:

These devices should be installed near socket outlets that are easily accessible.

These devices support universal AC input: 100/240VAC @ 50/60Hz. The product is sold in a base configuration with a North American AC power cord with the following characteristics: device side has a 3-prong "PC" power type C13 beveled connector; the wall outlet end has a US type 110-volt outlet connector.

For specific country power cords, contact the manufacturer or purchase the needed power cord directly from an international power cord provider.

About

This guide provides the information needed to setup and use the GigaCID. The GigaCID receptacle provides the capability to read data cartridges while interfacing with the client system as a SCSI device over standard Ethernet. This guide does not include information on applications used to access, write, or read data cartridges used in the GigaCID receptacle. In addition to the hardware, client system must have software installed to properly communicate to the GigaCID receptacle. The software consists of three components to provide the interface for legacy SCSI applications.

- GigaCID Service – A Windows service that runs automatically at boot to receive data and provides the connection interface for the GigaCID receptacle.
- GigaCID Console – A Windows application that displays status and provides control of GigaCID receptacle on the local area network (LAN).
- GigaCID Drivers – Device drivers that provide the SCSI interface for legacy applications to communicate with the GigaCID receptacle.

Key features of the GigaCID over the MicroCID include:

- Multiple devices connected to a client system without the need for additional hardware
- Attaches to the client system via Ethernet - SCSI card adapters are not required
- Performs over 40% faster than legacy hardware
- Supports Windows 10 (*see system requirements*)

**NOTE: *The GigaCID software does not provide any APIs or libraries to communicate with the cartridges*

GigaCID Hardware Overview

Front Panel
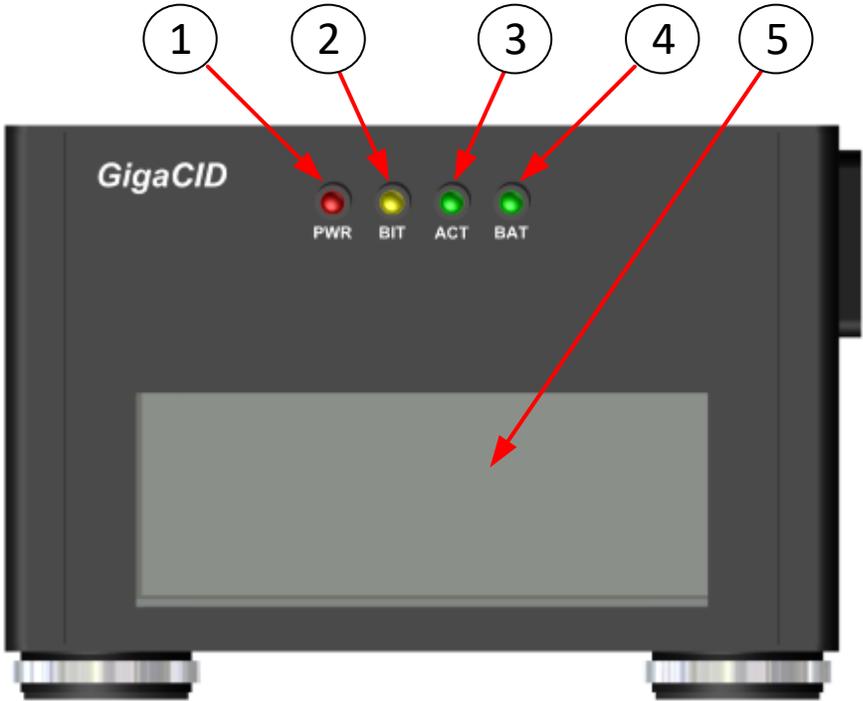
	ITEM	DESCRIPTION
1	LED PWR	Off - GigaCID is powered off On - GigaCID is powered on
2	LED BIT	Off - Most recent GigaCID BIT execution failed On - Most recent GigaCID BIT execution passed Flashing - GigaCID is executing BIT or identifying the cartridge
3	LED ACT	Off - Cartridge Data access is not in progress On - Cartridge Data access is in progress
4	LED BAT	Off - No cartridge installed On - The battery test passed for the cartridge currently installed Flashing - The battery test failed for the cartridge currently installed
5	Cartridge Slot	Insert a cartridge facing upward. Once inserted, close the handle. Doing so will power up the cartridge. Refer to the Data Cartridges under the GigaCID Receptacle section for supported cartridge types.

Rear Panel
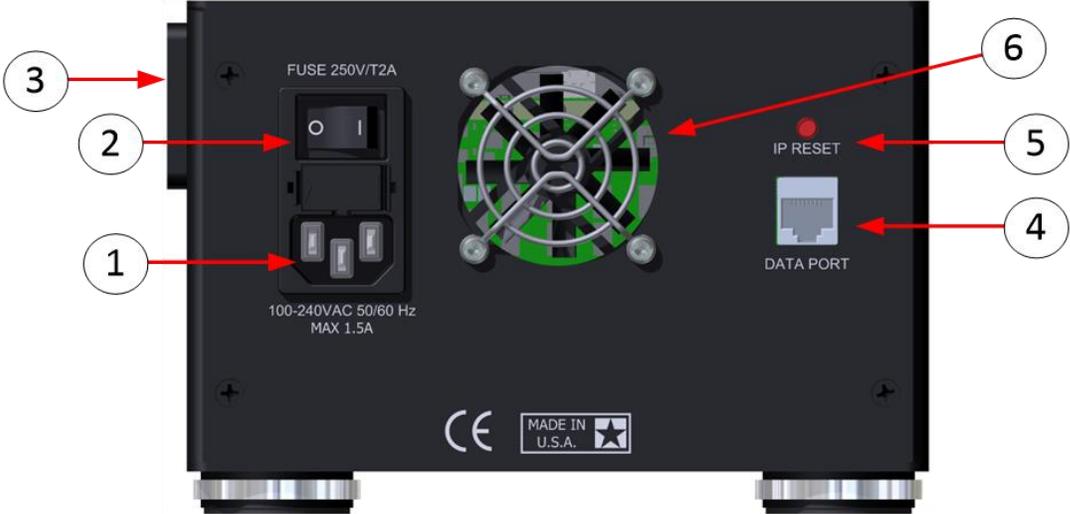
	ITEM	DESCRIPTION
1	Power Connector	Industry standard IEC power cord interface supporting a 3-prong "PC" power type C13 beveled connector. Connect the power cord to the power connector.
2	Power Switch	System main power switch. When in "|" or ON position, the internal AC-DC power supply is energized, and the receptacle is ready to support a DTC.
3	Side Fan (intake)	The side intake fan is controlled by the CPU to ensure internal temperature is maintained within operating limits. The intake fan uses a filter that can be replaced from the outside. Do not block the intake fan or overheating may occur.
4	Data Port	Gigabit Ethernet data port. **NOTE:** *It is recommended that you use a shielded CAT6 patch cord to connect the GigaCID to the network infrastructure.*
5	IP Reset Button	Used to reset the GigaCID IP address to its default value. Refer to the *IP Reset Process* for the procedure to reset the device.
6	Exhaust Fan	The exhaust fan is controlled by the CPU to ensure internal temperature is maintained within operating limits. Do not block the exhaust fan or overheating may occur.

GigaCID Software Overview

GigaCID Service

After being installed on the client system the service starts up automatically when the machine is booted. The service receives connection messages from a GigaCID receptacle and then attaches the device to the client system. Once a device is attached, the service facilitates communication between the SCSI legacy applications, driver, and the attached device. The service is installed with permissions for non-privileged users to stop/restart when required. It is important to note that if the service is stopped while a GigaCID receptacle is attached (*or in use*), the device will automatically be disconnected from the client system. The service writes a *service.log* file to the %ALLUSERSPROFILE% application data under the GigaCID folder. This is viewable using the console GUI be clicking **Help | View Service Log**.

GigaCID Admin Console

The console application provides the capability to attach a GigaCID receptacle or multiple devices to the client system, up to a maximum of seven. The console displays status messages received from multiple GigaCID receptacles on the LAN. The application does not require administrative privileges to function. All information and error messages are displayed within the console itself. The console application (*for GigaCID version 1.1.13*) supports auto-connection of a GigaCID receptacle. This is useful in the point-to-point scenarios if the end-user desires to keep the connection process to the local machine. If the console is exited, the auto-connection feature is not available. In other instances where auto-connection is not used the console is not required to remain open to use the GigaCID receptacle after it has been attached to the local machine.

GigaCID Drivers

The drivers facilitate communication between the SCSI legacy applications, Microsoft Windows, and the GigaCID receptacle. When the drivers are installed on the client system the GigaCID Adapter (*Storage controllers*) and GigaCID Processor (*System devices*) will be present in Windows Device Manager (devmgmt.msc).

System Requirements

Make sure the client systems meet these requirements before installing.
- Installed disk space — 1 MB (minimum)
- Memory — 64 MB RAM (minimum)
- Processor speed — 1 GHz (minimum)
- Network Connection — 1 GbE (preferred)
- .NET Framework 4.8 (is included with Windows 10 and up) (*console 2.5.0.10 or higher*)

Supported operating systems
Windows 10 64-bit

**Win7 and WinXP are no longer being maintained due to the OS being end-of-life.

Default Network Ports (*configurable)*
27015 UDP outbound (*command channel port*)
27014 UDP inbound (*status broadcast port*)
27014 TCP inbound (*heartbeat port*)
27015 TCP inbound (*data channel port*)
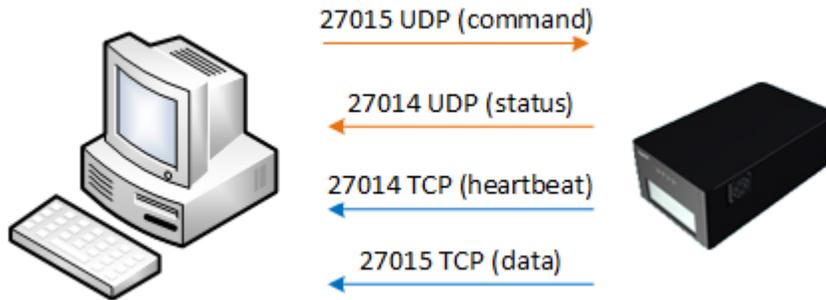
ⓘ *Make sure the ports are not blocked by a firewall application on the client system.*

Install Software

The GigaCID Console software installer is used to install the required software. Run the installer required for the system. Make sure that the system requirements are met.

1. When the installer opens click Next.
2. Check accept checkbox, click Next.
3. Click Next.
4. Click Install.
5. Accept driver prompts when displayed.
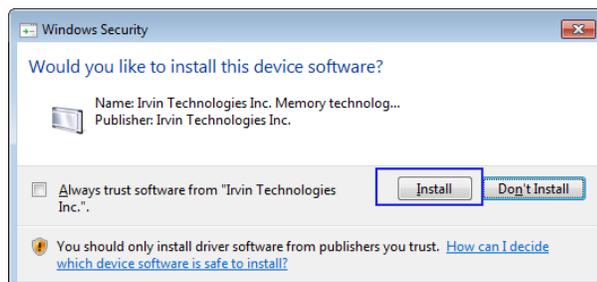
6. Click Finish.

Uninstall Software

To uninstall the software, perform the following.
1. Press Windows Key +R.
2. Run 'appwiz.cpl'.
3. Select GigaCID Software.
4. Click Remove or Uninstall.
5. Follow on screen prompts to complete the removal process.

Deployment

The concept of the GigaCID is to allow multiple devices to attach to a client system on the same LAN. A maximum of 7 GigaCID receptacles may be attached to a single client system at one time. Traversing firewalls to different subnets or LANs is not supported (*NAT, port forwarding, etc…*).
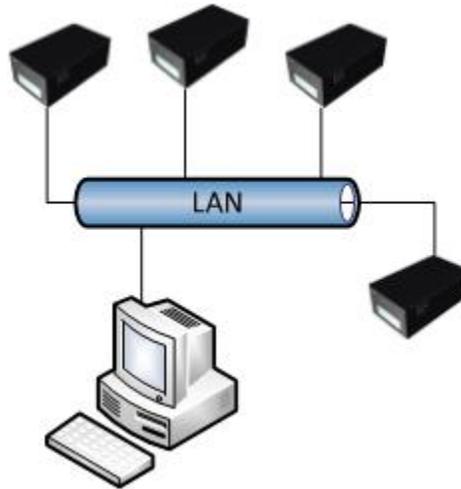
GigaCID Network Configuration Decision Tree

The GigaCID network configuration must be compatible with the target network. When there is a mismatch, either the target LAN must be changed or the GigaCID. Typically, it will be easier to change the GigaCID. The decision tree below shows the thought process involved in network preparation.
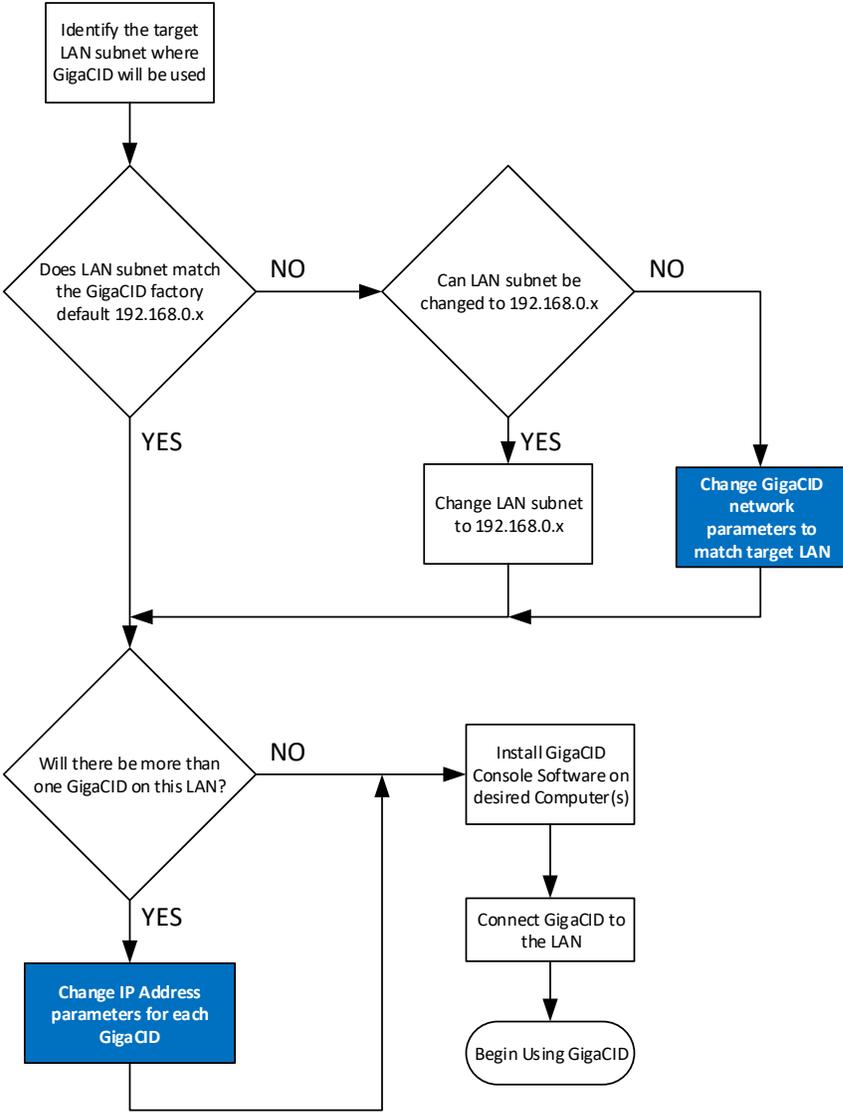
This user guide provides the information needed to change the GigaCID network parameters.

How-To Use Software

The console facilitates management of the GigaCID receptacles on the network.

1. Connect a client system to the Ethernet interface on the back of the GigaCID receptacle.
2. The default IP address for a factory fresh GigaCID is **192.168.0.3/24 (255.255.255.0 - 24bit mask)**.
3. Verify that the client computer is also on the same 192.168.0.x/24 subnet to be able to communicate.
4. If the client computer subnet does not match the GigaCID factory default subnet and/or there will be more than one GigaCID on your LAN, refer to the Application Note in Appendix A, Configuring GigaCID for your Network. Change the GigaCID network parameters as described in the Application Note in Appendix A of this document before proceeding. Continue with Step 5 after you are sure your computer and GigaCID subnets are a match.

5. Run the GigaCID Admin Console by double clicking on the shortcut located on the desktop or start menu.

6. In the admin console window, the GigaCID receptacle should be listed.

7. Click **Options->System Check**. In the lower output of the console the results will be displayed (and errors if they exist). An example output is:

> 10:23:56.984: Listening for GigaCIDs on port 27014.
> 10:23:58.578: Performing a systems check please wait...
> 10:23:58.625: The GigaCID virtual adapter found.
> 10:23:58.640: The GigaCID service is up and running.
> 10:23:58.640: There are no detectable GigaCID devices on the network.
> 10:23:58.640: System check complete.

8. Insert a data cartridge into the GigaCID receptacle and close the handle. The device will automatically detect the cartridge. See the **Data Cartridges** section for supported cartridge types.

🛈 *If changing to a different cartridge type, the GigaCID will reboot itself automatically to read the cartridge properly. This can take up to 40 seconds to complete and for the GigaCID to fully come online.*

⚠ *When inserting and removing cartridges, 15 seconds should be allowed to elapse before closing the handle with a new cartridge to allow Windows to remove the logical units. Failure to allow sufficient time could cause Windows to assign new SCSI identifiers and/or prevent the GigaCID from reconnecting the Windows SCSI driver. If this occurs the GigaCID receptacle must be rebooted.*

9. Selecting the GigaCID receptacle in the console will display information about the specific cartridge. See '**GigaCID Console References**' for more information.

10. In the GigaCID Admin Console window the GigaCID receptacles will be listed on the left. If no receptacles are listed refer to the **Troubleshooting** section.

11. Select the GigaCID receptacle then right click the link to "open telnet session". Enter "cfg" to enter the config utility. Enter the command "endpoint xxx.xxx.xxx.xxx" where x is the address of your host computer that is running the GigaCID console. When this is done, the SCSI LUNs will be presented to the client computer assuming a cartridge is present. Note that a cartridge is not required to configure an endpoint. The GigaCID will still show as connected with an endpoint IP and "None" for the cartridge. The console is also able to see a cartridge and it's LUNS in a disconnected state but they will not be accessible in Windows until the endpoint is set. An "endpoint clear" command is also available in the telnet config utility to correct misconfigurations.

12. Device prompts will typically be present when a GigaCID receptacle connects to the client system. These are normal and can be safely ignored. DO NOT click 'Format disk' if prompted.
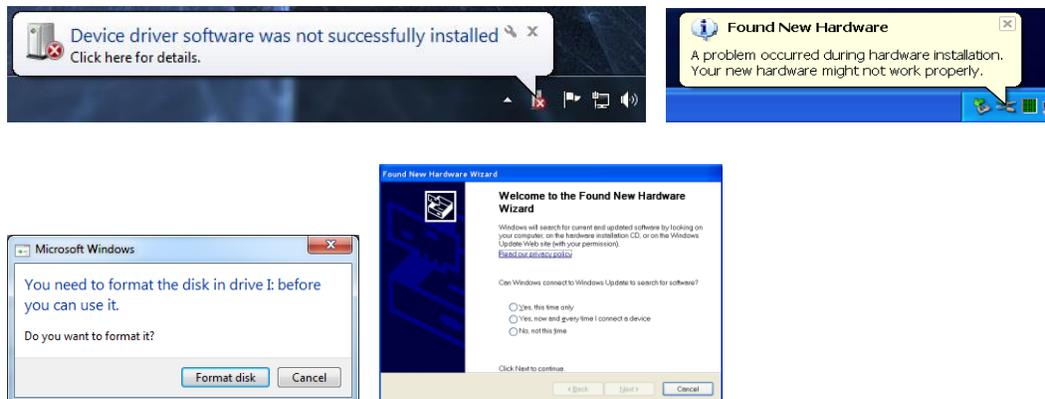
13. Press **Windows Key + R** to open a run prompt.
14. Run '**devmgmt.msc**' for Windows Device Manager.
15. In device manager select **View->Devices By Connection**.
16. Expand the '**GigaCID Adapter**' device and to see the configuration similar to following image if everything is working properly.
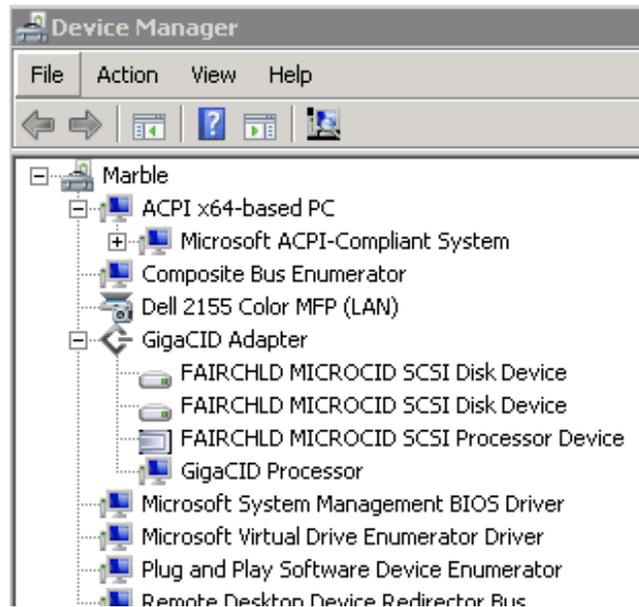
17. Make sure that disk cache is disabled for all **FAIRCHLD MICROCID SCSI Disk Device** types.

⚠ *When connecting an ADTC, it is required that LUN 0 and LUN 1 have write caching disabled to prevent data loss as Windows write cache can potentially not finish writing the LUN yet report that the write operation is complete. These settings typically retain through connections after set one time.*

Windows 10

    a. Expand the GigaCID Adapter device.

    b. Right click on each "**FAIRCHLD MICROCID SCSI Disk Device**"->click Properties.

    c. Click Policies tab.

    d. Select 'Quick removal' which disables write caching.

    e. Click OK.

    f. Repeat for other SCSI disks.

    g. The items marked a 'Processor' do not require this.

18. Now the GigaCID receptacle is connected and ready for use by SCSI software.
19. If disk cache is not disabled the drives must be ejected whenever they are written to or formatted. This can be done from the taskbar by right clicking on the icon
20. Once finished performing tasks on the cartridge simply select the same GigaCID receptacle in the console window and click the **Disconnect** link.

⚠ *When writing to the ADTC, the cartridge must be removed (handle in open position) before power cycling the GigaCID. If a write operation is performed on the ADTC and the GigaCID is power cycled, the cartridge will lose format. Remove the ADTC before power cycling/rebooting the GigaCID receptacle.*

21. Open the handle and remove the cartridge.

GigaCID Console References

The console facilitates management of the GigaCID receptacles on the network. GigaCIDs on the network have four states and are viewable in the console grid view. The endpoint method is effectively auto-connection which is to say once an endpoint has been set and cartridges are inserted, they are automatically connected and available for use.

States of Powered On GigaCID

No cartridge and no connection set

GigaCID	Cartridge	Status ▲	Endpoint IP
GIGACID	⊜ None	Disconnected	

Cartridge present and no connection set

GigaCID	Cartridge	Status ▲	Endpoint IP
GIGACID	● ADTC	Disconnected	

No cartridge and connection set on GigaCID

GigaCID	Cartridge	Status ▲	Endpoint IP
GIGACID	⊜ None	Connected	192.168.0.250

Cartridge and connection set on GigaCID

GigaCID	Cartridge	Status ▲	Endpoint IP
GIGACID	● ADTC	Connected	192.168.0.250

Cartridge status indicators

Cartridge type and status.
⊜ - no cartridge
● - device busy
● - normal
● - warning
● - error needs attention

The grid view will display the GigaCID receptacles on the network when they are powered on. If a device is not showing up in the grid, verify that the device is correctly connected and that it has been configured with the proper IP address, subnet, and gateway for the network (*see section GigaCID Receptacle configuration daemon*) and is powered on. Double click on a GigaCID receptacle to view its detailed information.

GigaCID device information

Host computer information

Cartridge LUN information
**not all cartridges have the same number of LUNs

Select a GigaCID receptacle from the grid view to perform actions for connecting to the local machine. The actions are available within the console window.

Actions

- **Connect** – Click to attach the GigaCID receptacle to the local machine. This process completes within a few seconds. This action is only available if the selected device is free. Older versions of GigaCID (*pre 1.3.x*) require a cartridge to be inserted as well.

- **Auto-Connect** – *NOTE: This action has been removed in GigaCID 1.3.x and later with Admin Console 2.5.0.7 and later. The functionality has been moved into the GigaCID and will auto-connect just by performing the 'connect' action.*

  Click to auto-connect the selected GigaCID receptacle to the local machine. When a cartridge is inserted into the receptacle and the handle is closed the console application will automatically connect the GigaCID to the local machine. When auto-connection is enabled the console application will start at user logon (*resides in the taskbar*). The auto-connection feature is only available when the console is open, either normal window or in the taskbar. To stop auto-connecting click 'Disconnect' while the GigaCID is selected or use the menu Options->Clear Auto-Connections. Auto-Connect will only succeed if the cartridges BIT passes (*e.g. no failures and shows as 'green'*). If requiring to ignore cartridge BIT failures, click Options->Auto-Connect Ignore BIT failures.

  NOTE: When ignoring BIT failures, the console may report errors when attempting to connect because the cartridge isn't ready. These can be ignored as connection should eventually succeed when the cartridge comes online.

- **Disconnect** – Click to disconnect the GigaCID receptacle. If auto-connect was enabled for the device it will be disabled. This action is only available if the selected device is already connected to the local machine.

- **Force Connect** – Click to forcefully attach the GigaCID receptacle to the local machine. This process will disconnect the selected device from the machine it is currently connected to and then attach it to the local machine. This action is only available if the selected device is connected to a machine other than the local machine.

- **Reboot** – Click to reboot the GigaCID receptacle. This action is only available if the selected device is connected to the local machine.

Device Prompts

Device prompts will typically be present when a GigaCID receptacle connects to the client system. These are normal and can be safely ignored. DO NOT click 'Format disk' if prompted.
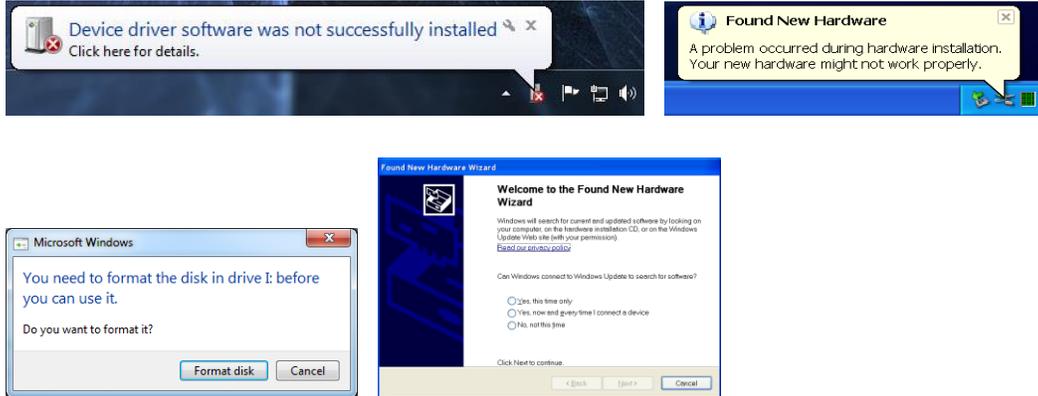
Changing Default Ports

The default ports of 27014 (*status port*) and 27015 (*command port*) are configured in the Windows registry. These may be updated if required to fit the network's needs (*requires administrative permissions*).

WARNING: This section, method, or task contains steps that tell you how to modify the registry. However, serious problems might occur if you modify the registry incorrectly. Therefore, make sure that you follow these steps carefully. For added protection, back up the registry before you modify it. Then, you can restore the registry if a problem occurs.

1. Click **Start**, click **Run**, type **regedit**, and then click **OK**.
2. Locate and then click the following registry subkey:
   HKEY_LOCAL_MACHINE\SOFTWARE\ITI\GigaCID
3. In the right pane, update the port values as needed. Click **OK** when finished.
4. Open the **GigaCID Admin Console** application.
5. Click **Options->Service Control->Restart** for the port updates to take effect. **NOTE:** *Port changes must also be in sync with GigaCID receptacle port configuration, described in the next section.*

IP Reset Process

The GigaCID IP address can be reset back to the factory default of **192.168.0.3** using the following process:
1. Power on the GigaCID.
2. Wait for the GigaCID to boot.
3. Using a pointed object (*e.g. paper clip or pen*), press and hold the reset button on the back of the unit for 5 seconds.
4. Wait for the LEDs to flash notifying the user IP reset has occurred.
5. Release the button.
6. GigaCID reboots with the default IP address.

GigaCID Command Line (CLI) References

The GigaCID receptacle must be configured to communicate on the local network. The default IP address for a factory fresh GigaCID is **192.168.0.3/24 (255.255.255.0 - 24bit mask)**. Connect a client system to the Ethernet interface and telnet to the device (port 23). The IP address can be reset back to factory default using the IP reset process documented below.

The following commands are available through the CLI.

NOTE: *Commands are case sensitive.*

Base commands	
cfg	Enter the configuration daemon to configure the GigaCID (*see next page*)
ping xxx.xxx.xxx.xxx	Ping a device on the network
DisplayBatteryTest	Used to display battery testing when a cartridge is inserted. Reboot the GigaCID to reset this setting. *GigaCID 1.3.x and higher*
el	Enable verbose output. This slows down the GigaCID and should only be used for debugging purposes.
dl	Disable verbose output.

Configuration Commands

Select GigaCID, right click and Telnet into the GigaCID. Run "*cfg"* to set IP addresses, ports, and name of the device. Once in the configuration daemon the following CLI commands are available.

NOTE: *Enter all commands on a single line. Commands are case-sensitive.*

General	
help	Prints list of commands
print	Prints the current configuration
save	Saves any changes that were made to the configuration
quit	Exits the configuration daemon
reboot	Reboots the device
disable_alloc	Clears the current connection if there is one present. *GigaCID 1.3.x and higher*
factory_reset	Resets the device to factory. All settings will be lost. *GigaCID 1.3.x and higher*
quit	Exits the configuration daemon
adtc_fw_id <firmware id>	Sets the simulated MicroCID firmware ID reported for ADTC cartridges. The default is 202F but some legacy application may require an older firmware id to function properly

xdtc_fw_id <firmware id>	Sets the simulated MicroCID firmware ID reported for DTC/MDTC/GDTC cartridges. The default is 201C but some legacy application may require an older firmware id to function properly

Cartridge	
adtc_min_voltage	ADTC minimum battery voltage, default: 3.4 *GigaCID 1.2.7722 and higher*
adtc_hide_lun1	<0 or 1> Hides LUN1 from the file system as a non-disk. This is useful for customers using cartridges while only using the MASMEM LUN0. *GigaCID 1.3.x and higher*

Network	
name <device name>	Sets the device name as displayed in the GigaCID Admin Console. This naming convention should be easily distinguishable. Max 14 characters.
eth1 <ipaddress> <subnet mask>	Sets the IP address of the device
broadcast <ipaddress>	Sets the broadcast IP address for the network (e.g., 192.168.0.255)
command_port <port>	Sets the command channel port to communicate to a client running the GigaCID software (default 27015)
status_port <port>	Sets the status broadcast port for clients running the GigaCID software (default 27014)
auto_alloc <ip address> <machine> <user>	Sets the IP address of the host computer running the GUI. If this setting is configured, inserted cartridges will auto mount to the machine. The machine and user are for information purposes only and does not affect any functionality. This is not necessary if the device is connected from the admin console, which will automatically set this. *GigaCID 1.3.x and higher*

ⓘ *Always 'save' and 'reboot after making configuration changes.*

Data Cartridges

The GigaCID is verified to support the following cartridge types/configurations:
- F16-DTC PN 7463002001
- MDTC/P PN 3962000000-12
- MDTC/P PN 3961000001-12
- ADTC PN D5142000012-30, PM6.0
- ADTC PN D5142112000-18, MC 3.1
- ADTC PN D6602000000-21, MC 3.1
- ADTC PN A3765000000-21, ML 1.0
- ADTC PN A3765000000-31, ML 2.0

Due to the vast number of cartridge configurations (>100) the GigaCID is not tested against all configurations. The GigaCID should support cartridges of the same family as those listed above. If issues arise, please refer to the vendor maintenance agreement to obtain vendor support.

ⓘ *When changing cartridge types the GigaCID will perform a reboot sequence on its own.*

With the GigaCID powered on, insert a data cartridge and close the handle. The GigaCID will automatically detect the cartridge. If changing to a different cartridge type, the GigaCID will reboot itself automatically to read the cartridge properly. This can take up to 40 seconds to complete and for the GigaCID to fully come online.

⚠ When writing to the ADTC, the cartridge must be removed (*handle in open position*) before power cycling the GigaCID. If a write operation is performed on the ADTC and the GigaCID is power cycled, the cartridge will lose format. Remove the ADTC before power cycling/rebooting the GigaCID receptacle.

⚠ Some cartridges support a LOAD/ERASE switch that can be used to erase the battery backed storage. If a cartridge is inserted with the ERASE switch on and with the GigaCID Connected/Auto-connect then the GigaCID and the GigaCID service will have to be restarted.

⚠ When inserting and removing cartridges, 15 seconds should be allowed to elapse before closing the handle with a new cartridge to allow Windows to remove the logical units. Failure to allow sufficient time could cause Windows to assign new SCSI identifiers and/or prevent the GigaCID from reconnecting the Windows SCSI driver. If this occurs the GigaCID must be rebooted.

⚠ Do not leave cartridges in the receptacle while not in use. This can potentially drain the battery in the cartridge if one is present.

Troubleshooting

This section provides troubleshooting tips for issues that may occur with the application.

Before troubleshooting always perform Options->System Check. The GigaCID console will report if it detects issues. If no errors or warnings are reported proceed with further troubleshooting.

GigaCID receptacle fails to be listed in the console grid

Typical cause: A firewall is blocking ports.

1. Verify that a firewall application on the local machine is not blocking the status broadcast port (*default 27014/UDP*).
2. Verify that the GigaCID receptacle is powered on, configured for the local subnet, and connected to the network.
3. Verify that the broadcast IP on the GigaCID receptacle is set properly for the subnet being used. Use an online subnet calculator for assistance if needed.
4. Verify that the local machine is on the same network as the GigaCID receptacle. Traversing firewalls to different subnets or LANs is not supported (*NAT, port forwarding, etc…*).

GigaCID receptacle fails to connect

Typical cause: A firewall is blocking ports. Third party software interfering with drivers.

1. Verify that a firewall application on the local machine is not blocking the command or heartbeat channel ports (*default 27015/TCP, 27015/UDP, 27014/TCP*).

2. Click Options->Service Control->Restart to restart the service.

3. Driver adapter did not install properly (see Options->System Check). Reinstall the application.
4. If there is an actual GigaCID receptacle connection problem, the GigaCID will report an error message in the console.
5. Legacy third party software conflicts. *See further down in the next section for troubleshooting information.*
6. System Check reports connected to a 'public' profile. This will prevent communication with the GigaCID because Windows on a public profile enforces firewall connectivity whether it is disabled or not. To change the profile:
    a. Open secpol.msc
    b. On the left navigate to Network List Manager Policies.
    c. Double click on the current network adapter, click the Network location tab.
    d. Set the location type to 'Private'. Click OK.
    e. Repeat these steps for the 'Unidentified Networks' and 'Identifying Networks' items.

GigaCID software .MSI fails to install or uninstall

Typical cause: The driver is in use by Windows.

1. Verify that there are no GigaCID receptacles connected to the local machine and try install/uninstall again.
2. Reboot the machine and try install/uninstall again.

More than one GigaCID adapter detected

Typical cause: Installation failed because a process was in use. A subsequent installation has installed a second virtual adapter.

1. Uninstall the GigaCID software completely using **Programs and Features** and reinstall the application. Open the console to see if the issue is resolved.
2. If the error is still reported even after reinstallation, uninstall the application again. Then open Device Manager (*devmgmt.msc*). Click **View | Devices by connection**. Uninstall any listed **GigaCID Adapter** components (*right click, Uninstall*).
3. Install the GigaCID software again.

Legacy Software Conflicts

In the old configuration with a MicroCID, the device was connected through SCSI and always present to the operating system. Regardless if a cartridge is inserted, the MicroCID was present. This is not the case with the GigaCID. When the GigaCID is connected and a cartridge inserted, virtual devices are added to the operating system on the fly. What this means for legacy application is, typically a legacy application does not rescan the bus for SCSI devices, as such the legacy application may not see the cartridge properly. To correctly see the cartridge in a legacy application, make sure the application is closed, insert a cartridge, wait for connection, then open the legacy application. If a cartridge is removed and a different cartridge is inserted, the application must be closed again and reopen. This isn't a limitation of the GigaCID, it is how the old legacy application were designed (*not to rescan for SCSI devices*).

Also, legacy software used with previous hardware such as the MicroCID can cause issues with the GigaCID software. This section provides troubleshooting tips for issues that may occur.

1. Click Windows Start Menu -> Run.
2. Run '**devmgmt.msc**' for Windows Device Manager.
3. In device manager select **View->Devices By Connection**.
4. Expand the '**GigaCID Adapter**' device and you should see the configuration similar to following image if everything is working properly.
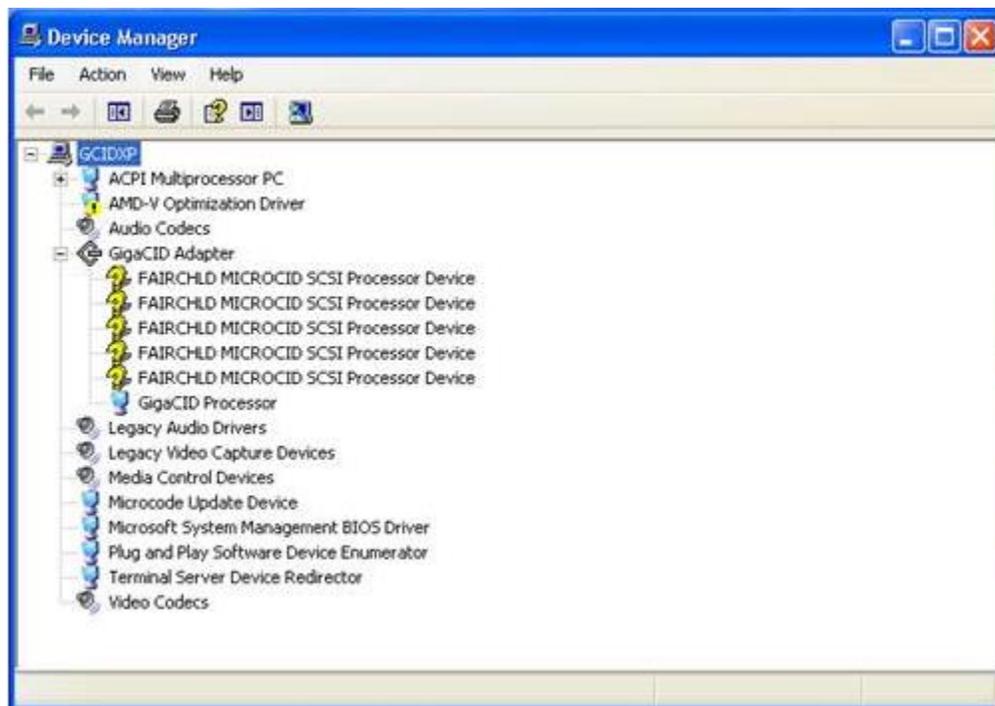
If the FAIRCHLD devices shown as disabled (marked with red **X**'s), this will prevent the GigaCID console software from attaching to GigaCID hardware devices.

If the machine was previously supporting MicroCID, there is typically a program running called '**Icon Removal Service**', the service should be disabled when using GigaCID software and hardware. To check your configuration do the following:

1. Open Windows Start Menu -> Run.
2. Run '**msconfig**'.
3. Under the services tab, sort by Manufacturer.
4. Uncheck **Iconremover** and select **Apply**.

5. Reboot the machine if not prompted to do so.
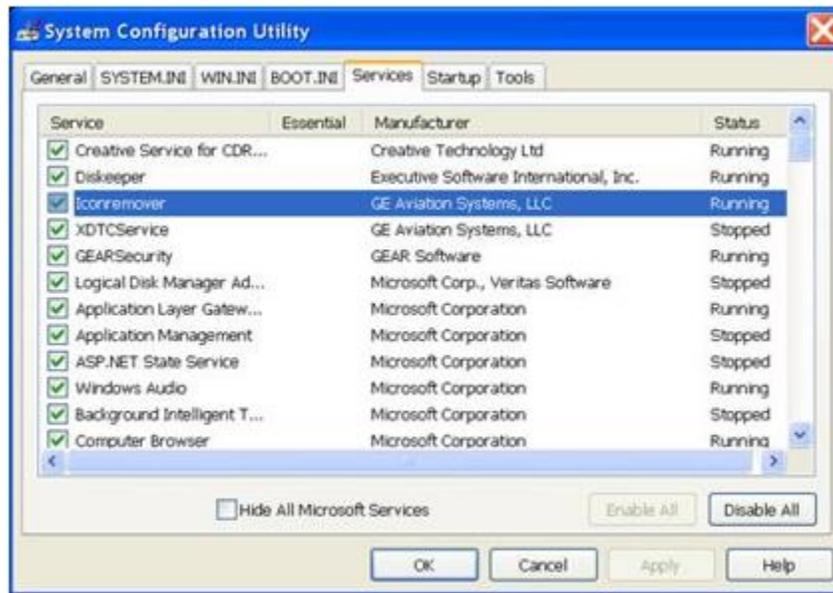
ⓘThe 'Icon Remover' manufacturer maybe listed at Smiths Aerospace depending on how old the software is.

After the machine reboots, insert a cartridge into the GigaCID and perform re-perform the connection procedure using the admin console. Check the device manager again to confirm the FAIRCHLD devices are enabled (no red **X**'s).

⚠ **ATTENTION:** *You will have to manually enable each FAIRCHLD device the first time after stopping the 'Iconremover' application*.

APPENDIX A

Application Note

CONFIGURING GIGACID FOR YOUR NETWORK

The GigaCID and the target network must be compatible. When there is a mismatch, either the target LAN must be changed or the GigaCID. Typically, it will be easier to change the GigaCID. The decision tree below shows the thought process involved in network preparation.

```
                    ┌─────────────────┐
                    │ Identify the target
                    │ LAN subnet where
                    │ GigaCID will be used
                    └────────┬────────┘
                             │
                             ▼
         ◇ Does LAN subnet match ◇  NO    ◇ Can LAN subnet be ◇  NO
         ◇ the GigaCID factory   ◇ ─────► ◇ changed to 192.168.0.x ◇ ──┐
         ◇ default 192.168.0.x   ◇        ◇                       ◇     │
                   │                              │                     │
                 YES                            YES                     │
                   │                    ┌─────────────────┐   ┌─────────────────┐
                   │                    │ Change LAN subnet │  │ Change GigaCID  │
                   │                    │ to 192.168.0.x    │  │ network         │
                   │                    └────────┬────────┘   │ parameters to   │
                   │                             │            │ match target LAN │
                   ▼◄────────────────────────────┴────────────┴─────┘
         ◇ Will there be more than ◇  NO   ┌─────────────────┐
         ◇ one GigaCID on this LAN? ◇ ────►│ Install GigaCID │
                   │                       │ Console Software on
                  YES                      │ desired Computer(s)
                   │                       └────────┬────────┘
          ┌─────────────────┐                       ▼
          │ Change IP Address │            ┌─────────────────┐
          │ parameters for each│           │ Connect GigaCID to
          │ GigaCID           │            │ the LAN         │
          └────────┬────────┘             └────────┬────────┘
                   │                                ▼
                   └─────────────►           ( Begin Using GigaCID )
```
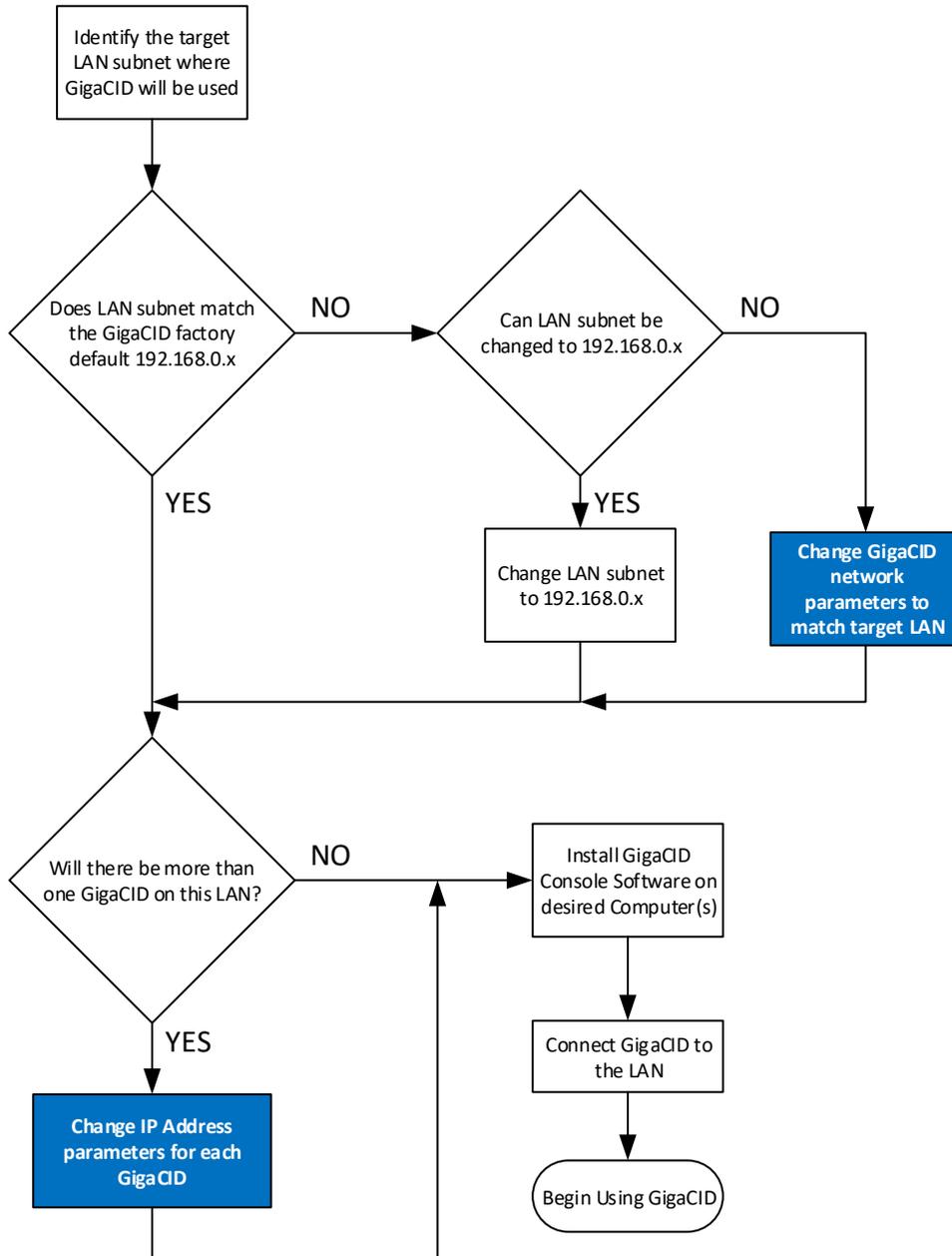
If the client computer subnet does not match the GigaCID factory default subnet and/or there will be more than one GigaCID on your LAN, the GigaCID network parameters must be changed as indicated in the decision tree. This application note provides a step-by-step procedure to make the changes to the GigaCID network parameters. This application note does not provide information about installing GigaCID Console software or user applications. For GigaCID information beyond this report, refer to the main content of the GigaCID User Guide.

Introduction

The GigaCID is a data cartridge receptacle that provides the capability to read and/or write a variety of flight data cartridges over standard Ethernet. The general usage scenario for the GigaCID is that one or more GigaCID devices will be connected to a user LAN. The GigaCID devices will then be accessed by one or more computers on the LAN to access flight data cartridges. Computers used to access the GigaCID will be configured with GigaCID Console software and typically one or more user applications. Before the GigaCID can be accessed on the user LAN, its network parameters must be configured to be compatible with the user network so that it appears on the same subnet as the client. This report steps through the detailed process to configure a GigaCID for compatibility with the subnet on a user LAN where the GigaCID will be used.

GigaCID Network Parameters

The GigaCID uses the following networking parameters:

Parameter Name	Factory Default	Description
IP Address/Port	192.168.0.3/23	This defines the IP address and port assigned to the GigaCID.
Subnet Mask	255.255.255.0	Mask used in conjunction with the GigaCID IP address to ensure the GigaCID operates on the desired subnet
UDP Broadcast IP Address	192.168.0.255	This is the UDP broadcast IP address that enables the GigaCID to broadcast its' presence on the LAN.
Endpoint IP	None	This is the IP address of the host computer running the GigaCID console. Once this is set cartridges will auto mount. This setting is persistent.

Note about ports: The GigaCID uses standard ports associated with TCP (27014/27015), UDP (27014/27015) and Telnet (23/24) services. Typically these will be supported by most LAN configured computers. If you are concerned or have questions about ports being used, confer with your local IT personnel.

Before you Begin

The following items will be required to change the GigaCID networking parameters:

Item	Description / Purpose
Computer / LAN configured for subnet 192.168.0.x	A computer with Telnet capability is required to access the GigaCID Configuration Tool used to change the networking parameters. The computer can be standalone and directly connected to the GigaCID or it can be on a LAN so long as the subnet is 192.168.0.x and the computer has an IP address on that subnet. Figure 1 below shows the two choices for this setup.

Telnet support on the Computer	The GigaCID networking parameters are changed using GigaCID Configuration Tool built into the GigaCID accessible using a Telnet program. Telnet is a standard terminal emulation program supported by Windows based computers and many other platforms. In order to change the GigaCID networking parameters, you must have Telnet capability on the computer being used.
Factory Fresh GigaCID	The network parameters of the GigaCID are known when it leaves the factory. If there is any doubt about the GigaCID network parameter settings, you can perform an IP Reset function. Refer to the main content of the GigaCID User Guide for the IP Reset Process.

DIRECT ETHERNET CONNECTION

GB ETHERNET

COMPUTER   GIGACID

COMPUTER:
Configured with IP Address = 192.168.0.x,
Where "x" is anything except 3

GigaCID: with Factory Defaults
IP Address = 192.168.0.3
Subnet Mask = 255.255.255.0
Broadcast IP = 192.168.0.255

LAN CONNECTION

GB ETHERNET

GB ETHERNET SWITCH

COMPUTER   GIGACID

SWITCH:
Configured for subnet 192.168.0.x

Computer and GigaCID are same as in Direct Connection

Figure A1.   GigaCID Connection for use of GigaCID Configuration Tool to configure network parameters.

## Step 1:   Confirm you Network Settings

Verify your network settings on your computer and switch if necessary. Refer to Figure A1.

Step 2:   Power-up the GigaCID

Confirm your GigaCID is connected to facility power and your network connection is made. Do not insert a cartridge in the GigaCID during this process. Turn on the main power switch for the GigaCID and observe the front panel LEDs. The GigaCID PWR lamp will illuminate immediately and the system will begin its internal built-in-test (BIT). After approximately 20 seconds of test, the BIT and BAT lamps will come on for a few seconds. The BAT lamp will turn off and the BIT lamp will flash a few times then remain on. The GigaCID is now booted and ready.

Step 3:   Open a Command Shell

On the computer, open a command shell to provide you a command line interface. You can do this by clicking on the windows icon and then type "cmd" in the search box. The cmd shell will open and appear something like the example shown below.
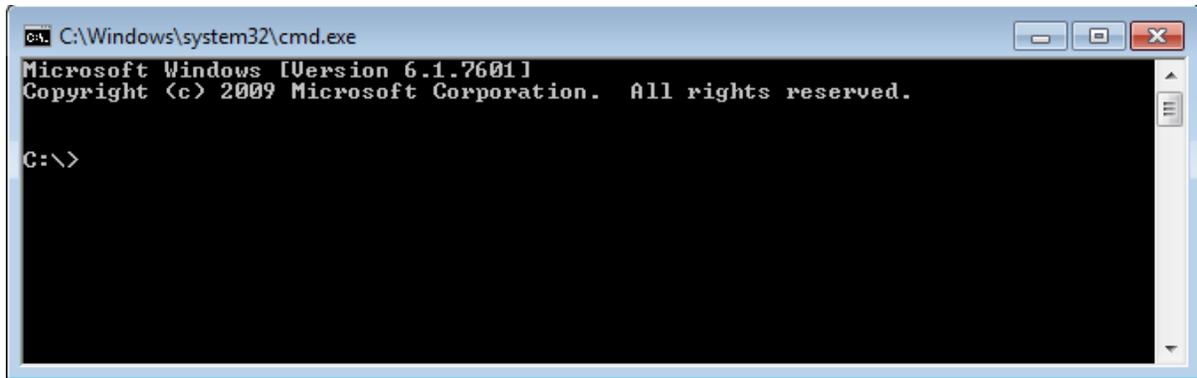
Step 4:   Initiate the Telnet connection to the GigaCID

Type the telnet command along with the factory default IP address for the GigaCID as shown in the example below and hit the Enter key.
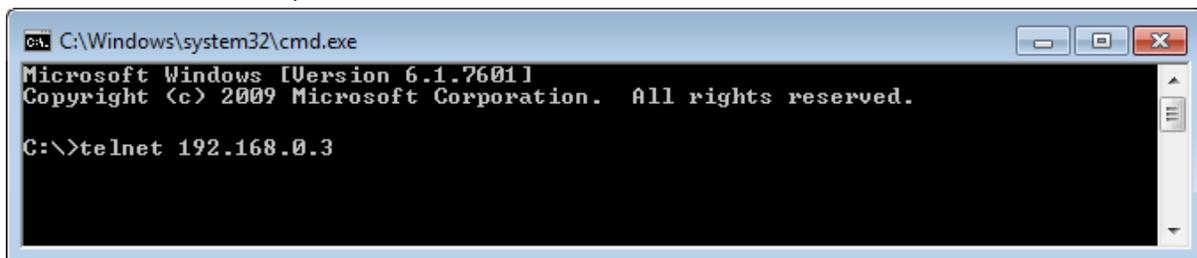
This will open the Telnet session to the GigaCID and the cmd shell window will clear showing only the telnet prompt as shown below. Note the top bar shows the Telnet programing is running and the IP address of the GigaCID.
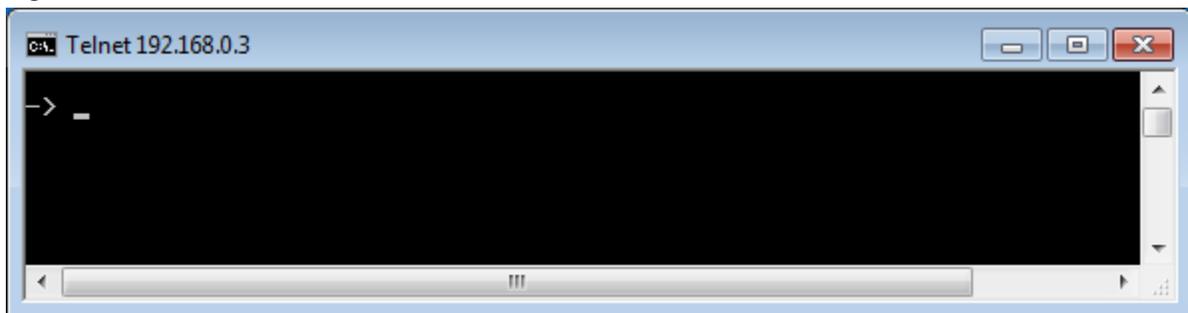
Step 5: Run the GigaCID Configuration Tool

At the CMD prompt, enter the "cfg" command as shown below. After hitting enter, the window will show the Configuration Tool startup information as shown below. If desired, refer to the main content of the GigaCID User Guide for more information about the command line interface.
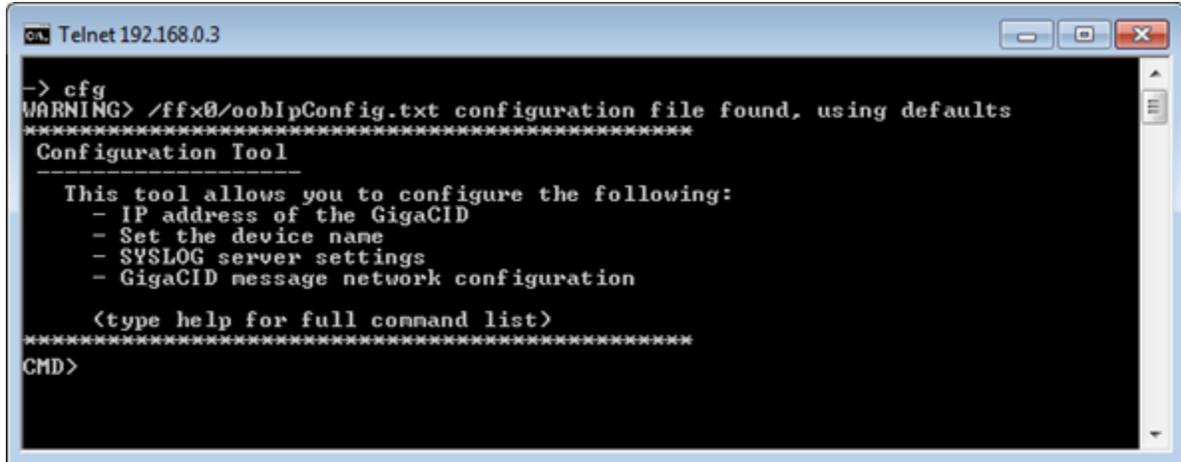
Step 6: Change the GigaCID Ethernet address and subnet mask

For the purposes of this example, assume the user LAN where the GigaCID will be used is 192.168.1.x and the IT personnel asked you to assign the GigaCID to 192.168.1.50. Type the "eth1" command along with the IP address and subnet mask as shown in the example below. Upon hitting the Enter key, the response will echo back the entered IP address and subnet mask. If desired, refer to the main content of the GigaCID User Guide for more detail about this configuration command and other available commands.
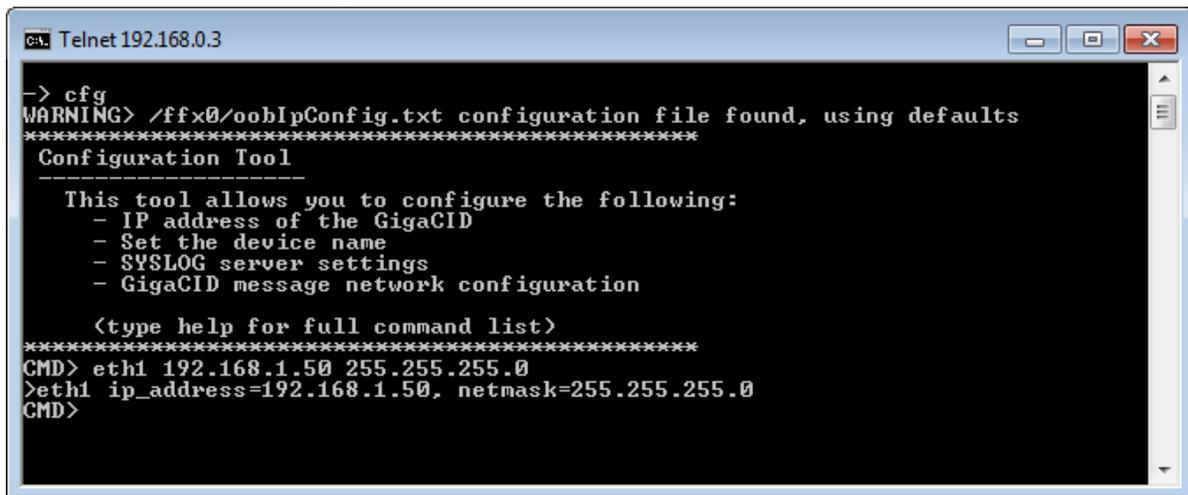
Step 7: Change the UDP Broadcast Address

The UDP broadcast address must also be changed to match the desired LAN. Type the "broadcast" command and the broadcast address for the target LAN as shown in the example below. The UDP broadcast address is x.x.x.255 where the "x.x.x" matches the target LAN. After hitting the Enter key, the CMD prompt will appear as shown below.

```
Telnet 192.168.0.3

-> cfg
WARNING> /ffx0/oobIpConfig.txt configuration file found, using defaults
**************************************************
  Configuration Tool
  --------------------
    This tool allows you to configure the following:
      - IP address of the GigaCID
      - Set the device name
      - SYSLOG server settings
      - GigaCID message network configuration

      (type help for full command list)
**************************************************
CMD> eth1 192.168.1.50 255.255.255.0
>eth1 ip_address=192.168.1.50, netmask=255.255.255.0
CMD> broadcast 192.168.1.255
CMD> _
```

Step 8:   Save the New Settings

The network parameters entered will be lost upon power cycling the GigaCID unless they are saved to non-volatile memory. To save the parameters, enter the "save" command. Upon hitting the Enter key, the response will indicate the configuration has been saved as shown below.


```
Telnet 192.168.0.3

-> cfg
WARNING> /ffx0/oobIpConfig.txt configuration file found, using defaults
**************************************************
  Configuration Tool
  --------------------
    This tool allows you to configure the following:
      - IP address of the GigaCID
      - Set the device name
      - SYSLOG server settings
      - GigaCID message network configuration

      (type help for full command list)
**************************************************
CMD> eth1 192.168.1.50 255.255.255.0
>eth1 ip_address=192.168.1.50, netmask=255.255.255.0
CMD> broadcast 192.168.1.255
CMD> save

  configuration saved

CMD> _
```

Step 9: Reboot the GigaCID (Final Step)

Reboot the GigaCID with the new parameters by entering the "reboot" command as shown below. The response will indicate the GigaCID is rebooting. Once the GigaCID reboot is complete, the Telnet connection will be lost because the unit is now configured for your target network. You can turn off the main power to the GigaCID and move it to your target network.

With the GigaCID on your target network, refer to the main content of the GigaCID User Guide for information on how to install and use the GigaCID Console software.