VNC Automotive
Connectivity that moves

Getting Started Guide

Cobalt Link+ Server for Windows

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1 Introduction

The instructions detailed in this document will allow you to set up the Cobalt Link+ Server.

The use case covered by this document is the installation and first-time setup of the Cobalt Link+ Server.

2 Hardware requirements

The following hardware items are required to run the Cobalt Link+ Server:

- A Windows PC with minimum System Requirements:
  - Windows 10 (32/64 bit)
  - Dual-core processor (Celeron or better, ideally Intel I series)
  - 4GB RAM
  - Gigabit Ethernet
- An Ethernet cable

Furthermore, it is assumed that a network has been set up, to which the host PC can connect over Ethernet or Wi-Fi; and that a device capable of running an instance of a Cobalt Link+ Viewer is connected to said network.

3 Cobalt Link+ Server software installation

This section details all the steps required to install the Cobalt Link+ Server.

3.1 Cobalt Link+ Server components

The Cobalt Link+ Server installation consists of several components.

3.1.1 The Service

A Windows service that is responsible for starting and monitoring the Server application

3.1.2 The Tray Application

This is responsible for exposing configuration / log information for the Server application and service. This can also be used to start / stop the Server Application.

3.1.3 The Server Application

This is the main component of the Cobalt Link+ Server, and it is in charge of establishing a connection to a Cobalt Link+ Viewer and performing the screen capture and input injection once the connection is established.

3.2 Cobalt Link+ Server Installer

Download and transfer the 32 or 64 bit installer file for your intended PC. If you are unsure which file to use, please check the Windows system settings.

To install the Server, run `CobaltLink+ServerEmbedded-Installer_<architecture>-<version>.msi` and follow the on-screen instructions. <architecture> in this case will be either x86 or x64 depending on your host system. <version> will be the release version number for the Server.

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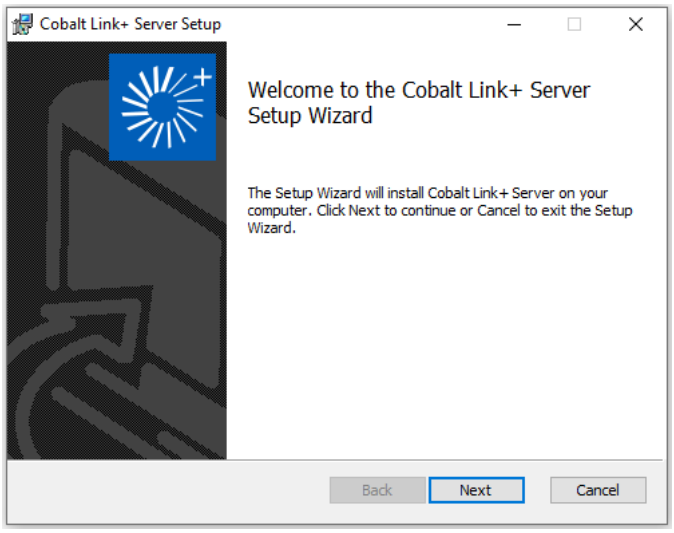
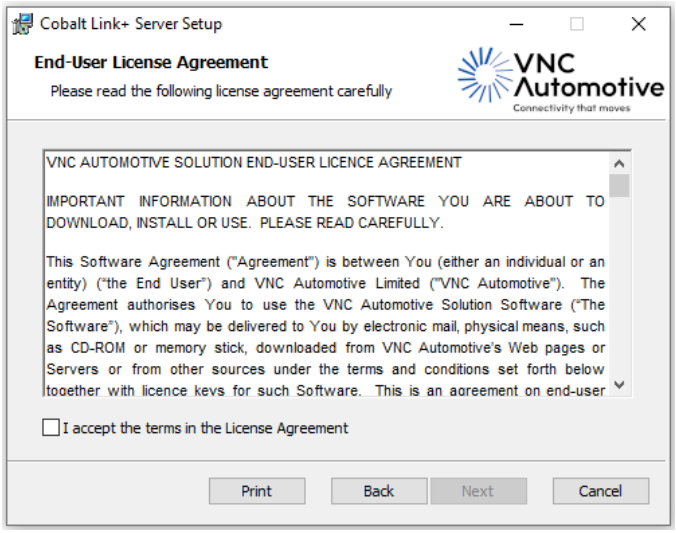
3.2.1 Welcome screen



3.2.2 End-User Agreement

You must accept the terms and conditions of the end-user license agreement before you may install the Cobalt Link+ Server Application.



3.2.3 Destination and startup options

In this step:

> Select where you wish to install the Server if different from the default path.

> Enter the password that will be used by viewers to connect to this server. The password entered here must match the password supplied to a connecting viewer or the connection will be rejected. For no password this should be left blank.

> Select if the Cobalt Link+ Server should start automatically on login.

- For most installations, it is recommended that the Cobalt Link+ Server should start on login.

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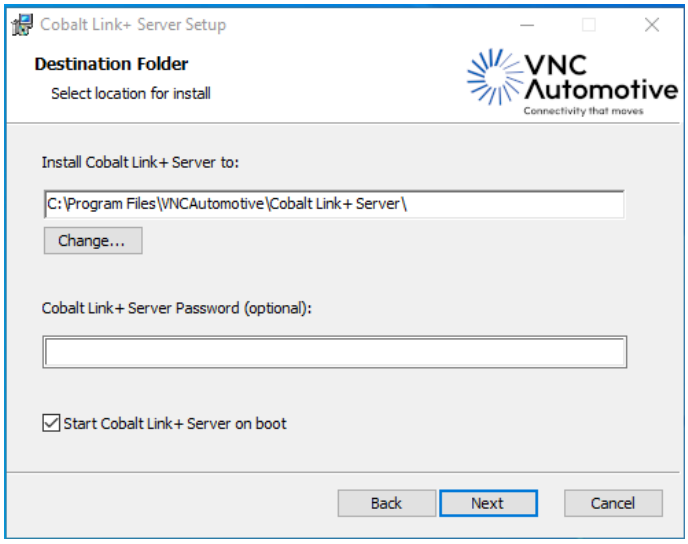
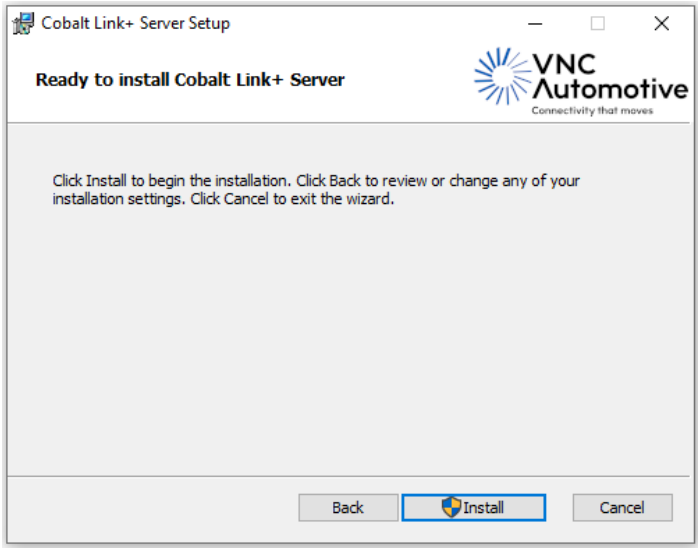


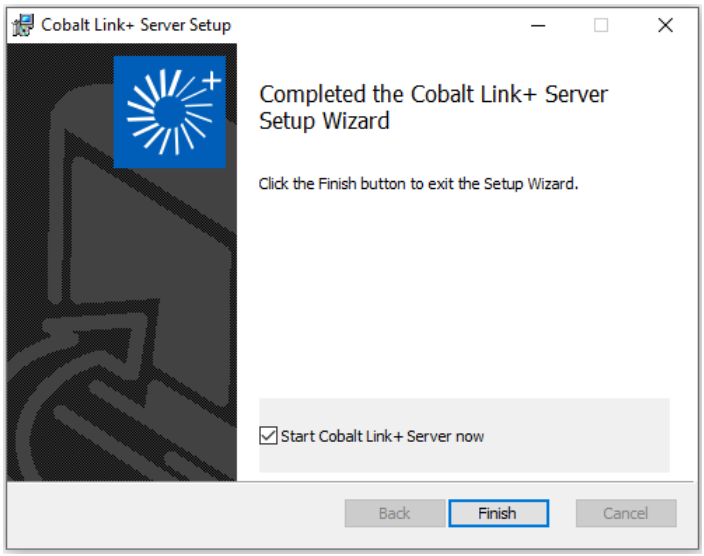
3.2.4 Summary and install



3.2.5 Completion Screen

The Server and its supporting files have been successfully installed if you reach this screen.

Leave the checkbox checked if you wish to start the Cobalt Link+ Server immediately upon exit.



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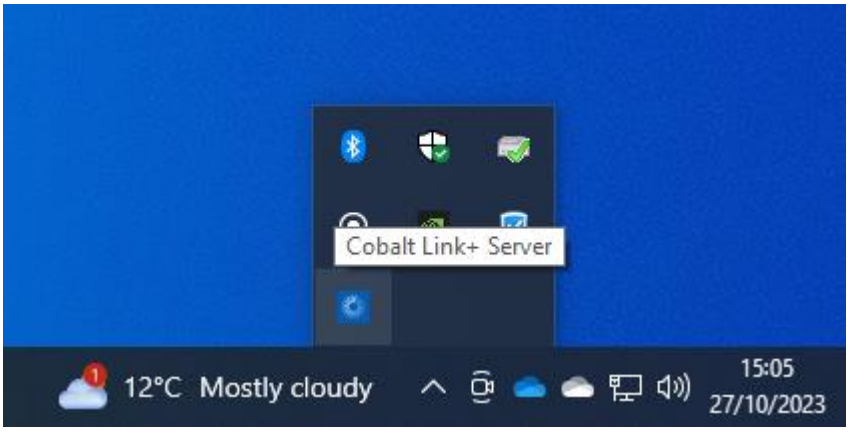
4 Cobalt Link+ Server Setup

4.1 Cobalt Link+ Tray application

Configuration and interaction with the Cobalt Link+ Server after installation is managed through the Cobalt Link+ Tray application. This can be found in the tray area of your start bar.

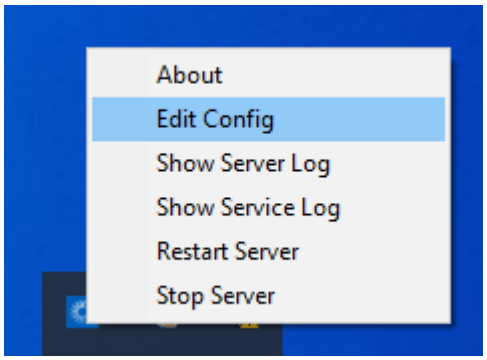


4.2 Server Configuration

The default configuration for the Cobalt Link+ Windows server will automatically start listening for incoming connections on port 5900 and advertising itself via network broadcast on port 5899.

Should the user wish to change the configuration, they may provide a valid VNC Automotive command string at the end of the command line in the configuration file.

The configuration editor can be accessed through the Cobalt Link+ tray application.



Note: You must have administrative privileges for the Edit Config option to appear. Normal users are not able to edit the Cobalt Link+ Sever configuration.

4.2.1 Configuration options

The following additional options are also available and should be given before the command string:

Argument	Description	Example Usage
`-m`	Start the console window minimized. Note: this is mutually exclusive with **-h**.	`CobaltLink+Server -m <optional command string>`

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`-h`	Start the console window hidden. Note: this is mutually exclusive with `-m`.	`CobaltLink+Server -h <optional command string>`
`-fb`	Selects the screen to mirror in a multi-monitor environment. If not specified, monitor 0 will be mirrored. Note only one screen can be mirrored at once.	`CobaltLink+Server -fb 1 <optional command string>`
`-c`	Prevents the server from drawing the mouse cursor in its output.	`CobaltLink+Server -c <optional command string>`
`-noadvertise`	Prevents the server from advertising itself on the local network.	`CobaltLink+Server –noadvertise <optional command string>`

4.2.2 Example Command Strings

The Server supports two modes, Listen and Connect. By default, the Server will start listening on port 5900 unless a command string is given.

Command String Type	Format	Example	Description
Listen	`vnccmd:v=1;t=L;p=<port>`	`vnccmd:v=1;t=L;p=5900`	The Server will listen for incoming connections on the specified port. When a connection is terminated, the Server will return to listening.
Connect	`vnccmd:v=1;t=C;a=<viewer ip address>;p=<port>`	`vnccmd:v=1;t=C;a=192.168.1.140;p=5900`	The Server will attempt to connect to the specified IP Address and port. The Server will attempt to make the connection until it is successful or closed. Note there is a few second cooldown delay between attempts.

For more information about VNC Automotive command strings, please contact your VNC Automotive sales representative.

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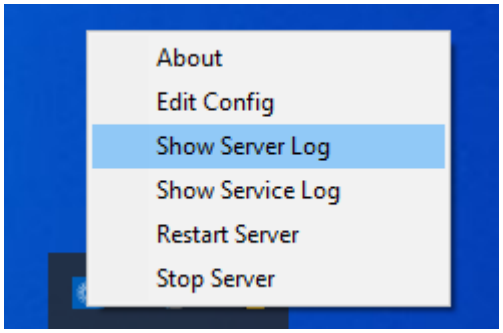
4.3 Logfiles

The Cobalt Link+ Server writes its log output to the console and to a log file. The file can be accessed through the Cobalt Link+ Tray Application.



Note: To avoid gradually taking up space on the host, there is only one log file, and it is replaced each time the Server is restarted.

4.4 Firewalls

The Cobalt Link+ Server requires firewall ports to be open in order to function properly. The table below details the port configuration.

Application	Port Number	Type	Direction	Purpose
Cobalt Link+ Server	5900	TCP/UDP	Inbound/ Outbound	Default port for connections
Cobalt Link+ Server	5899	TCP/UDP	Inbound/ Outbound	Network advertisement

Note: The installer for the Cobalt Link+ Server will automatically open the above default ports. If you wish to use different ports you will need to configure these yourself.

4.5 Screen resolution

It is important to consider the aspect ratio of the device that the Cobalt Link+ Server will be connecting to and choose your desktop resolution accordingly.

For best results, the aspect ratio of the Windows machine should be a match (or close match) to the viewer display. Many devices have a 16:9 aspect ratio or wider. In these cases, we advise a 1280x720 or 1920x1080 resolution or similar.

5 Running the Cobalt Link+ Server

5.1 Auto Start

During installation you had the option to run the Cobalt Link+ Server on startup. If you chose this option, then the Server will launch automatically when the system boots.

Note: With this configuration the Server starts in hidden mode. Use task manager to verify the Server and supporting application are running if required.

5.2 Manual Start and Stop

The Cobalt Link+ Server can be manually started, stopped, and restarted (e.g. after a configuration change) using the Cobalt Link+ Tray Application.

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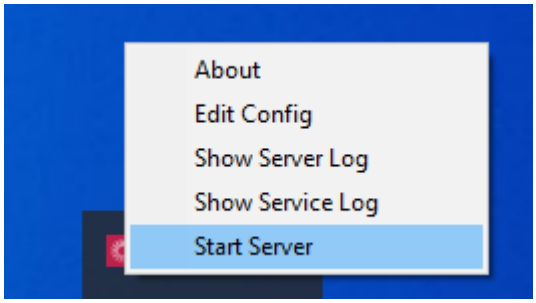
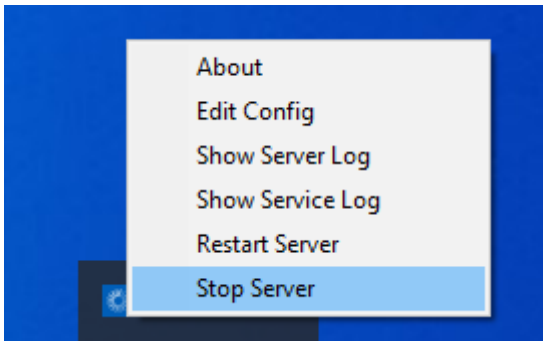
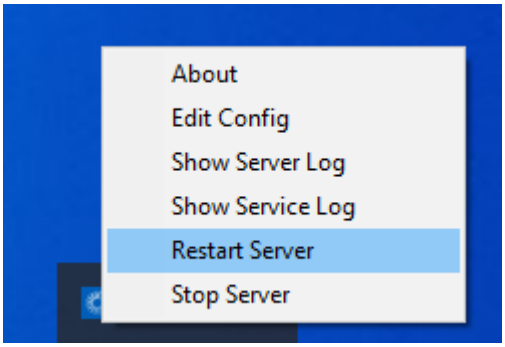
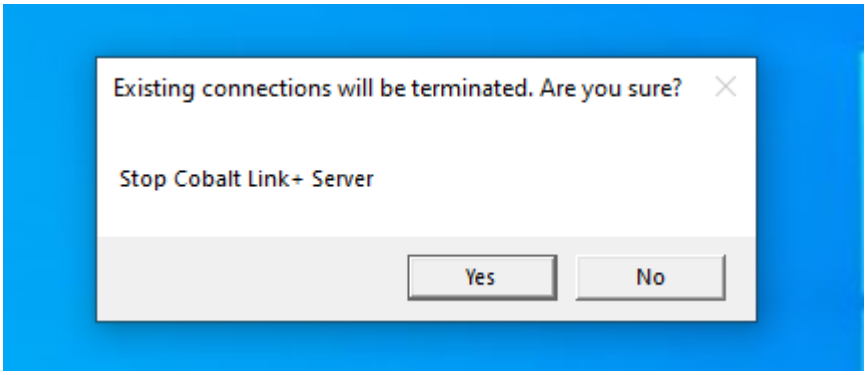






To prevent accidental stops or restarts of the Cobalt Link+ Server the user will be prompted to confirm the action.



Note: If the Server or supporting apps are already running, they will not be launched again.
Note: Stopping the server will disconnect any connected viewers.

5.3 Errors and messages

The Cobalt Link+ Tray Application will go from blue to red in the event of a problem with the Service or the Server.

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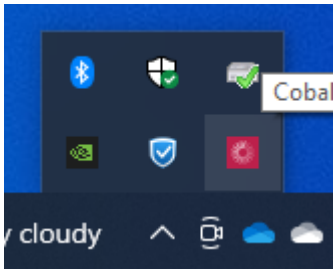
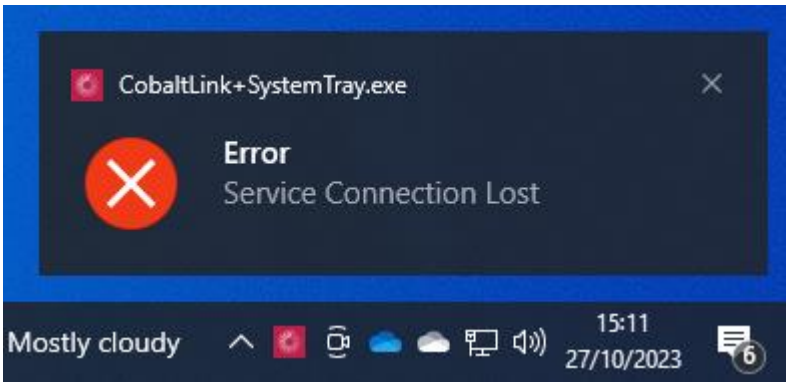


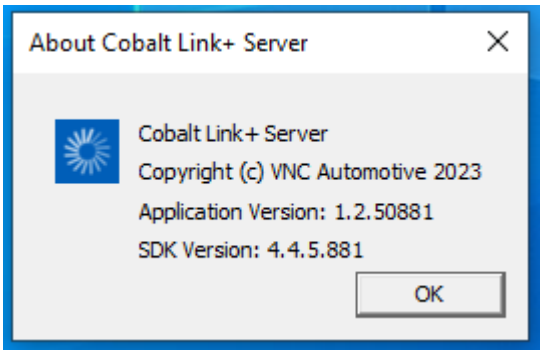
The Cobalt Link+ Tray Application will display messages to the user when appropriate. An example message for an unexpected problem with the service looks as follows.



6 Frequently asked Questions

6.1 Viewing about information

About information for the currently installed Cobalt Link+ Server can be accessed through the Cobalt Link+ Tray Application



6.2 A referral was returned from the server

This error message presents when the host machine is missing the trusted root CA certificate that was used to sign the Cobalt Link+ Server binaries.

To resolve this:

> Select where you wish to install the Server if different from the default path.

> Download root CA "DigiCert Trusted G4 Code Signing RSA4096 SHA384 2021 CA1" from the internet here: https://cacerts.digicert.com/DigiCertTrustedG4CodeSigningRSA4096SHA3842021CA1.crt

> Alternatively, look for the correct certificate here: https://www.digicert.com/kb/digicert-root-certificates.htm

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> Select the row that matches "DigiCert Trusted G4 Code Signing RSA4096 SHA384 2021 CA1"

> If not downloaded directly to the host system, copy to the host via a USB stick.

> Double click on the DER/CRT file to install the certificate.

> Restart the Cobalt Link+ Server (or whole PC if further issues seen)

> The Cobalt Link+ app should now start as normal

6.3 Configuration file changes are not having an effect

> Make sure you have saved the file and restarted the server using the Cobalt Link+ Tray Application.

> Make sure there are no trailing spaces or new lines at the end of the configuration file

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technicalsupport@vncautomotive.com

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