



RELEASE NOTES

Virtual Control

4.0003.00045 March 1, 2024

Product or Content Description

Software based enterprise grade control system to run on a RedHat, Rocky Linux or Alma Linux Server.

Mono: 6.12.0.107

System Requirements and Dependencies

Software Requirements:

- RedHat 8.2 or greater / RedHat 9.0 or greater
- Rocky Linux 8.4 or greater / Rocky Linux 9.0 or greater
- Alma Linux 8.3 or greater / Alma Linux 9.0 or greater
- Device Database 200.175.001.00 or greater
- Crestron Database 211.05.001.00 or greater
- SIMPL Windows 4.2500 or greater

Supported browsers:

- Chrome 67 or higher
- Safari 11.1 or higher
- Edge 17 or higher
- Firefox 61 or higher

Operational Installation/Upgrade Instructions

Follow the installation instructions listed on: <https://docs.crestron.com/en-us/8912/Content/Topics/Home.htm>

Product page: <https://www.crestron.com/Products/Control-Hardware-Software/Software/Licensing/VC-4-ROOM>

Important Information

With software version 4.0003.00016 we have added support for *Inter Program Communication*.

This allows for an easier way for rooms on the same server to communicate with each other without needing IP addresses or even IPIDs. This is great for deployments where there's a single head-end program and multiple "cookie-cutter" programs.

For more information and use-cases, please refer to the symbol documentation in SIMPL Windows.

Minimum database versions

To be able to use Inter Program Communication on VC-4, the minimum software versions that the program needs to be compiled with are:

- Device Database 200.305.001.00
- Crestron Database 221.05.001.00
- SIMPL Windows 4.2500
- NuGet 2.20.37

With software version **4.0002.00039** we have added support to install VC-4 on Red Hat 9.x, Rocky Linux 9.x, and Alma Linux 9.x

There are no functional differences between the EL8 and EL9 versions of VC-4.

There is a single installer for both versions which will detect your current OS version and will install/upgrade the correct version automatically.

Configuration of BACnet on VC-4 is done through the WebUI where the most common BACnet settings are exposed. Additional settings can be made through the BACnet config file that can be found in the **conf** directory of your VC-4 installation:

/opt/crestron/virtualcontrol/conf by default.

Please see the documentation for more information. <https://docs.crestron.com/en-us/8912/Content/Topics/Configuration/Web-Configuration.htm>

Minimum database versions

To be able to use BACnet on VC-4, the minimum software versions that the program needs to be compiled with are:

- Device Database 200.245.001.00
- Crestron Database 216.05.002.00
- SIMPL Windows 4.2000
- Include4.dat 2.19.036

With software version **4.0000.00007**, we have added support to load and run SIMPL programs on VC-4. With version **3.1210.0043** of Toolbox, you will also be able to debug your SIMPL programs through SIMPL Debugger!
For more information on using SIMPL Debugger with VC-4, please visit Online Help article [1001246](#)

Running SIMPL#Pro / C# programs is still supported with this release.

For more information related to this exciting new release, please visit Online Help article [1001234](#):

Downgrading from version 4.0000.00007 back to a prior release is possible, please follow the [instructions](#) when you have SIMPL programs loaded and running.

Minimum database version

To be able to load a SIMPL program to VC-4, the minimum database that the program needs to be compiled with is: **200.175.001.00**
This contains include4.dat version: **2.18.085**

Socket communication

When using SIMPL / SIMPL+ TCP communication, Crestron recommends not using more than 1000 total connections across all rooms on a single server. We will continue to improve Virtual Control to allow for a larger number of sustained connections in the future.

Using SIMPL# sockets we have validated 2000 sustained connections on a single server.

Version History

Version 4.0003.00045

March 1, 2024

Resolved Bugs

- Resolved an issue where rooms would go to aborted state when restarted in quick succession.
- Resolved a license issue on room restart when all available room licenses on a VC-4 server are in use.

Version 4.0003.00039.02

January 5, 2024

New Features

- Added proxy support for XiO Cloud connections.
Proxy configuration can be done through the *Settings* tab in the WebUI or through the REST API.
WebUI setting for Proxy configuration is **not** shown when VC-4 is in Offline Licensing mode.
- Added the ability to restart the VC-4 service from the *Actions* menu.
- VC-4 syslog now shows if room IPTable has been loaded from the program or from a custom .dip file in the USER folder.
- Upgrade script will now stop the virtualcontrol service before continuing with installation. Depending on the number of rooms that are running this can take several minutes.

Resolved Bugs

- Resolved an issue with updated GPG keys on Alma Linux that prevented VC-4 from being updated.
- Resolved an issue where Ethernet Offline Manager would not show the correct state after service start or room restart.
- UDP Communication symbol now shows ONLINE (Enabled) or OFFLINE (Disabled) state correctly in the WebUI.
- Resolved an issue where NVX Director wouldn't come online if it was the only device added to a program.
- Resolved an issue where existing Offline License could get invalidated after changing Network Interface in adapter.conf

Known Issues

- NTLM proxy connections will always use Basic Authentication

New Features

- Added support for Inter Program Communication.
This feature allows for an easier way for rooms on the same server to communicate with each other. Please refer to the symbol documentation in SIMPL Windows for more information about this new feature.
- Added the ability to restart a room from the Actions menu in the WebUI.
REST API support to restart a room has also been added.
- Added the ability to change the IPTable for a room at runtime.
Please refer to the [documentation](#) for more information.
- BACnet version now shows in WebUI under Device Info
- WebUI will now prevent any action from being executed until the virtualcontrol service is fully up and running.
- Added support for AES-128SHA cipher for 3rd party devices that require this specific cipher. Add a file called supportAES128cipher in the *virtualcontrol/conf/* directory to enable it. This file does not need to contain any data.
- Maximum allowed NVRAM usage across all rooms has been increased to 128MB.
Because of this, downgrading from version 4.0003.00016 to any older version will clear all NVRAM data.

Resolved Bugs

- Resolved an issue where prolonged SCIP communication could crash the CIPCommandProcessor.
- Resolved an issue where after switching from Online to Offline licensing, there was a possibility that an incorrect SystemKey was shown while the service was restarting.
- Resolved an issue where TCP Client based communication would not recover after an Ethernet link loss.
- Resolved a possible error when installing on Red-Hat / Alma / Rocky Linux 9.2: cgconfig.service does not exist.
- Web Xpanel would not work when VC-4 was installed in non-default directory.
- No longer using the /tmp folder during installation and runtime.
- Resolved SELinux errors in the syslog when starting the VirtualControl service.

New Features

- Added support to install VC-4 on RHEL9.x, Rocky Linux 9.x, and Alma Linux 9.x. See the *Important Information* section for more details.
- Added the ability to create Read-Only API tokens, which can be used to allow a 3rd party device to authorize itself. Upon upgrading to version 4.0002.00039, existing API tokens will remain Read/Write.
- USB-OFFLINE dongle now automatically detected upon insertion. This will speed up showing the proper System Key in the WebUI or licenseUtility.
- Added support for an additional parameter in the BACnet configuration file to allow BACnet to work properly on systems with multiple network interfaces:
`<BacnetAdapter>ADAPTERNAME</BacnetAdapter>`
- Updated IoT SDK to version 1.9.1

Resolved Bugs

- Resolved an issue where User files could get deleted if the virtualcontrol service starts without an active database connection.
- Resolved an issue where the licenseUtility would crash when used without the virtualcontrol service running.
- Resolved an issue where an Offline License could get invalidated during runtime and needed to be entered again.
- Changing the address of an already running program would cause the name of the User file to be represented incorrectly in the WebUI.
- DeviceKey parameter in API response now correctly reflects the right value.
- Resolved an issue when starting rooms with spaces in the name.
- Resolved an issue where installation script could hang if used in an automated way using *expect*.

Known Issues

- After switching the licensing mode through the WebUI, the VC-4 service must restart. During this period, there is no indication in the WebUI that the service is restarting.

Version 4.0001.00098

April 27, 2023

New Features

- Added WebUI support for Offline Licensing
You can now change the licensing mode and add Offline Licenses through the VC-4 WebUI. Please refer to the [documentation](#) for more information how to manage licenses on VC-4.

Resolved Bugs

- When updating only the notes for a room, the save button wouldn't be enabled in the dropdown to save the changes.
- Resolved an issue with installing on Alma Linux 8.x

Known Issues

- After switching the licensing mode through the WebUI, the VC-4 service must restart. During this period, there is no indication in the WebUI that the service is restarting.

Version 4.0001.00065

April 5, 2023

Issues Resolved

- Improved BACnet object adding and COV subscription timing.
- Resolved an issue with installing on Alma Linux 8.7
- Resolved an issue where devices on NET 2 of a DIN-CENCN-2 would not come online.
- Resolved an issue where GRPC would not start properly after a reboot of VC-4.
- Resolved an issue where a Secure CIP connection would not always reliably reconnect.

Version 4.0001.00055

February 14, 2023

Issues Resolved

- Resolved an issue where notes would get removed after restarting a room.

New Features

- Initial release that adds support for BACnet to VC-4.
- LicenseUtility now only shows SystemKey when VC-4 is in Offline mode.

Issues Resolved

- Optimized first time Ethernet device registration on the VirtualControl service.
- When using a TCP/IP Server in SIMPL Windows, a FIN/ACK was not always sent when closing the socket.
- Removed “*Maintenance License is required*” from the Update banner message in the WebUI.
- In some instances, **USER** files would not get unzipped when a room was started.
- Updated crestron.conf to allow to larger USER files to be uploaded. **NOTE:** This only applies to new installations.
- Resolved an issue where the WebUI would not group items in separate pages but would show all items at once.
- In Offline mode, rooms would revert to the default New York timezone.
- When a VC-4 server is claimed in XiO Cloud within the 90-day trial period, but no license is added through XiO Cloud, the server ends up in a bad state after the 90-day trial period ends.
- Resolved an exception when issuing a GET request to the CWS server running in a room.
- Resolved an issue when the VC-4 WebUI was accessed using *localhost* from a browser on the same machine the VC-4 server was hosted on.
- **Save** button was grayed out after changing the timezone of a room in the settings tab.
- Resolved an issue where the user would be unable to add a 0-byte USER file to a room.
- Resolved SELinux errors in the syslog when starting the VirtualControl service.
- WebUI allowed an API Token to be generated with an empty Description.
- Removed symlink to crestron.conf in httpd config directory after uninstalling VC-4.

Known Issues

- Any **Notes** that have been added to a Room get lost when that room is stopped.
- RedHat / Rocky / Alma Linux 9.x not supported with this version of VC-4.
- Using more than 10 Authentication Groups can lead to unexpected results.
- SSL signals on Ethernet Device Extender do not report properly.

New Features

- With this release, we have added support for offline licensing of VC-4 using the [USB-OFFLINE](#) dongle.
Please see the documentation for more information how to configure, request and manage licenses:
<https://docs.crestron.com/en-us/8912/Content/Topics/Configuration/Manage-Licenses-Offline.htm>

Issues Resolved

- Resolved an issue where the VC-4 installer could erroneously try to copy temporary files into /virtualcontrol
- Resolved an issue where devices on NET 2 of a DIN-CENCN-2 would not come online.

Known Issues

- RedHat / Rocky / Alma Linux 9.x not supported with this version of VC-4.
- Using more than 10 Authentication Groups can lead to unexpected results.
- SSL signals on Ethernet Device Extender do not report properly.

Version 4.0000.00012

October 6, 2022

New Features

- When adding room licenses from XiO Cloud, VC-4 no longer restarts all rooms. When decreasing licenses from XiO Cloud, VC-4 will stop the rooms that are exceeding the new license count.

Issues Resolved

- Contents of NVRAM could get cleared after a VC-4 service restart.
- Resolved an issue where a room license would be erroneously consumed by a room in an aborted state.
- Resolved an issue where restarting a large number of rooms could result in some IPTable entries not registering properly.
- Rooms could end up in an aborted state after a service restart when a space was used in the program file name.
- Resolved an issue with WebSocket client communication.

Known Issues

- RedHat / Rocky / Alma Linux 9.x not supported with this version of VC-4.
- System fields are not updated in WebUI when updated via RestAPI calls.
- Fusion HTML5 Public Key Server will accept an invalid URL without showing an error message.

Version 4.0000.00007.01

June 13, 2022

Issues Resolved

- Updated install script to work with AlmaLinux version 8.6

Known Issues

- RedHat / Rocky / Alma Linux 9.x not supported with this version of VC-4

New Features

- 🎉 Initial release that adds supports for SIMPL programs 🎉
- Added support for SIMPL Debugger to debug SIMPL programs.
An updated version of Toolbox (3.1210.0043 or greater) is needed for this to work.
- Added a “Copy” button to copy the API token to the clipboard
- Added “Python Version” to the WebUI under “Device Info”
- Added “Mono Version” to the WebUI under “Device Info”

Issues Resolved

- Files from USER folder are no longer removed when a room goes to aborted state.
- Files from NVRAM folder are no longer removed from a room when the program for that room gets updated.
- Resolved a library issue to prevent Virtual Control service crash.
- Certificate from ssl.conf was not used for port 49200
- With PAM / HTTPS enabled, touchpanel project would not be sent to a connecting device.
- Both “Start” and “Stop” were available in the WebUI accordion for a room at the same time.
- VC-4 service no longer restarts when Fusion HTML5 Validate Server Certificate is enabled and OCSP is configured.
- Improved stability with sustained HTML5 Web Xpanel connections.
- Improved performance with large number of HTML5 Web XPanels connecting.
- Street address was updated with default values after a stop/start of a room.

- Creating a room with “Address sets location data” turned off now sets the time zone correctly from the dropdown list.
- “Actions” accordion on a room page could take up to 5 seconds to become active after opening the page.
- Removed syslog errors when CEN-IO connects to a room.
- Resolved an issue where a room going into aborted state could still consume a room license.
- Various WebUI improvements.
- Installer no longer fails when *firewalld* is not running

Version 4.0000.00007

April 20, 2022

Known Issues

- Installing VC-4 into the /home directory can lead to unexpected results.
- Using more than 10 Authentication Groups can lead to unexpected results.
- SSL signals on Ethernet Device Extender do not report properly.
- Using spaces in database username or password during installation can lead to unexpected results.
- When using UDP communications, the IPID will always show OFFLINE under device details in the WebUI.
- When using SELinux, please refer to our [manual](#) to properly configure your system.
- If you are upgrading from an existing version of VC-4 to this release, please clear the cache of your browser after the upgrade has completed.

Version 2.7000.00047

December 30, 2021

Issues Resolved

- Resolved an issue where a new installation would sometimes be unable to start rooms.
- Time zone would reset to default when restarting a room.
- ControlSystem.SupportsSystemMonitor would return **true** when it should be false on VirtualControl
- ControlSystem.SupportsBACNet would return **true** when it should be false on VirtualControl

Known Issues

- User files will be deleted if room goes to aborted state due to licensing issues.
- When Fusion HTML5 Validate Server Certificate is enabled and OCSP is configured, the VC-4 service can restart intermittently.
- Installing VC-4 into a /home directory can lead to unexpected results.
- On some occasions, time zone would revert to America/New_York when “Address sets location data” is turned off and a timezone is selected from the dropdown list. Setting the time zone through the address fields works as expected.

Version 2.7000.00039

November 10, 2021

New Feature

- Fusion HTML5 XPanel support.
- Support in installer for Rocky Linux and Alma Linux.
- Python script support. Go to <https://developer.crestron.com/> for more information.

Issues Resolved

- Resolved an issue with WebSocket connection timing that could result in a service restart.
- Changes to enable Core3z and c3prjz files project load.
- ~~• Files from USER folder are no longer removed when a room goes to aborted state.~~
- Device description in WebUI gets corrupted after 50 characters.
- User file not shown in WebUI under room settings tab.
- Added migration_script.sh back to installer package.
- Removed erroneous error message about subscription manager on CentOS during installation.
- Various RestAPI improvements.

Version 2.4557.00176

September 10, 2021

New Feature

- Max project file size increased from 128MB to 512MB
 - Documentation has been updated to reflect these changes

Issues Resolved

- Unable to claim a new installation of VC-4 in XiO Cloud
- After installer notified users the installation process was complete, some packages were still being installed.

Version 2.4557.00155

July 15, 2021

New Feature

- Upgraded Mono to 6.12
- Max project file size increased from 128MB to 512MB
- Updated IoT SDK
- You can now define which adapter VC-4 should use:
Create a file called adapter.conf with the name of the adapter to be used in the **conf** folder of VC-4 (Default: /opt/crestron/virtualcontrol/conf)

Issues Resolved

- Resolved an issue when installing on Azure VM
- CIP gateway connections do not show as online in VC4 web UI when running VC-4 on Azure

Known Issues

- Creating a device mapping through REST API fails. This will be fixed in a future release.

Version 2.4557.00147

April 20, 2021

New Feature

- Added support for Third-Party Device Monitoring via XiO Cloud
- Supports CH5 XPanel

Issues Resolved

- Improved stability with CIP connections
- Resolved issue with claiming VC-4 in the cloud
- Resolved issue installing on CentOS

Version 2.4557.00043

November 19, 2020

- Initial Red Hat / CentOS Release
- Resolved issue with rooms getting stuck in starting / stopping
- Resolved issues where services restart on their own
- Support CH5z files for touch screens
- Added support for Mobile Room Control via [Crestron ONE™ app](#). Crestron ONE app allows you to connect and control a Crestron programmed smart room from a personal mobile device.
 - Supported System Requirements
 - 60-Series Firmware (minimum version tsw-xx60_3.000.0014.001)
 - Models: versions that include Bluetooth, excludes the models with “-NC” in the product name as these do not include Bluetooth
 - VC-4 v2.4557.00043
 - VC-4 does not require a license to use Crestron ONE™ app.

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