CONTEMPORARY CONTROLS®

Introduction to the BAScontrol Toolset

Introducing the BAScontrol Toolset

- Contemporary Controls has developed the BAScontrol Toolset, a free set of Sedona tools operating on a Windows PC, which includes
  - BASemulator – a utility used to emulate controller operation on a Windows PC.
  - Sedona Application Editor (SAE) – an editing tool used to create function block (component) wiresheet applications in the Sedona environment.
  - BASbackup – a project utility which provides a convenient way of storing/restoring and replicating real or emulated controller settings and configurations, as well as a Sedona wiresheet applications.

Getting Started – Launch BASemulator

The BASemulator program emulates the BAScontrol series.
It allows you to write your Sedona wire sheet application and fully configure all parameters.

1. Launch the BASemulator program. You must leave the emulator running in order to configure its web page settings and write Sedona logic.
2. Choose the platform to emulate – BASC-20, BASC-22, or BASpi.
3. Choose the Interface IP address to run the emulator on (127.0.0.1 is the default local address and usually does not need to be changed).
4. Choose a Web Server Port (5001 is the default port and usually does not need to be changed).
5. Click "Start Emulator" to launch and the button will change state to "Emulator Running."
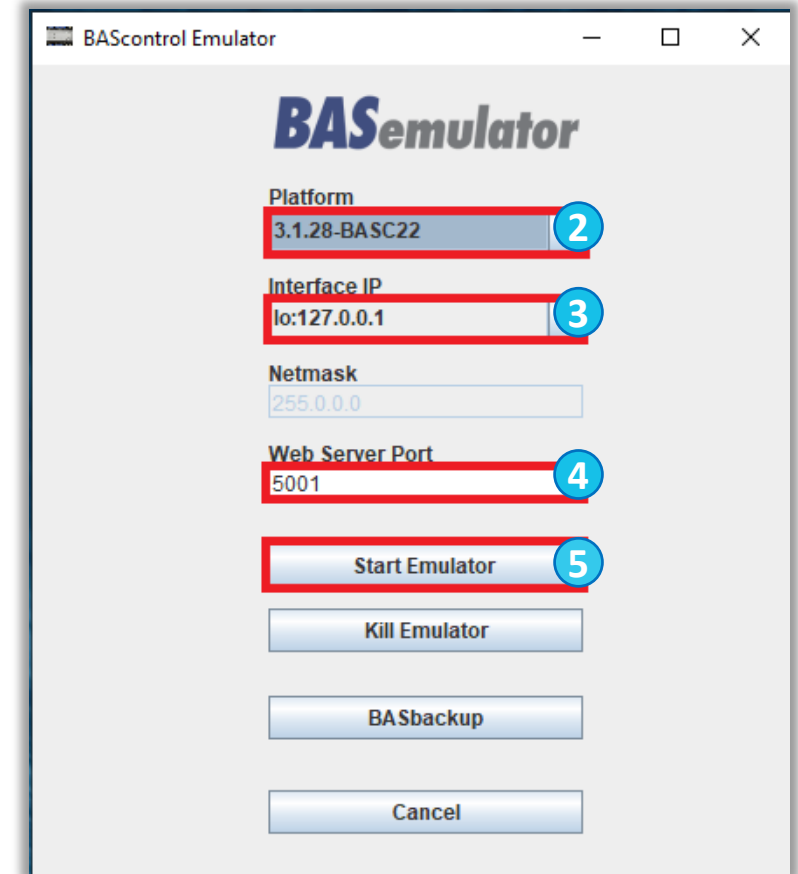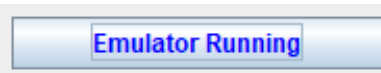
Getting Started – Launch BASemulator (continued)

A web page "Emulated BAScontrolX" will be launched.

You can configure I/O channels, BACnet, Network settings, and Web page configuration. All settings will be stored and available next time you launch the emulator. The emulator always runs on the specified IP address and port from the BASemulator program.

The network settings in the emulator's System Config page are only used to transfer to real controllers.

Getting Started – Launch BASemulator (continued)

You are ready to program Sedona logic, configure Web page settings, and backup and restore your logic and settings to a real controller.

1. To observe real-time I/O channel response on the web page, set the "Auto Refresh" to "On."

2. To launch SAE, click "SAE" from the BASemulator web page. Or, with the BASemulator running, you can launch SAE from your desktop or from your Start menu.

3. A pop-up will appear requesting permission to open the SAE (the message varies depending on your browser). Confirm that you want to open the application.

Getting Started – Launch SAE

From SAE:

1. Click the "Open Connection" icon on the toolbar.

2. Use address 127.0.0.1 to connect, unless you specified a different address when you launched the BASemulator. This address is always available in the "Host" drop-down selection and cannot be deleted. This is the default address for the BASemulator.

3. Enter the Username and Password. The default credentials are "admin" for both Username and Password.

4. Click "OK" to connect.

Understanding the Wiresheet Structure

The Navigation, Kits and Properties Panes can be hidden or displayed using the left-most icon on the tool bar.

Navigation Pane

Kits Pane

Wiresheet

Properties Pane

Customizing the Wiresheet Grid

Wiresheets are usually shown as a grid, but you can toggle the grid on and off by the clicking "Turn on/off Grid" icon on the tool bar.

Wiresheet

Understanding Components

Components are typically sorted by function and deployed in kits.

The components discussed in this presentation can be found in one of the core kits shown on the right that come installed with every Sedona controller.

Hvac components

Kits Pane

Adding a Component to the Wiresheet

To add a component:
1. Expand the kit, "hvac" in this example.
2. Select the component from the kit.
3. Drag and drop the component onto the wiresheet.

4. Click the component to view and update its

Properties, Links and Slots in the Properties Pane. The Properties tab shows you the Properties and Values for that component. The Links tab shows you links to other components. The Slots tab shows you the variable Type and Facets for each slot.

Renaming a Component

To rename a component:

1. Select the component. It will highlight with a red border and its properties will appear in the Properties Pane.

2. Click the Name field in the Properties Pane and type in the new name, "Heat1" in this example.

3. Hit return and the name changes.

Note: SAE prevents duplicate names, and names can only contain seven English characters a-z (upper and lower case) and numbers 0-9. The name cannot begin with a number or use special characters.

Creating a Blank Wiresheet

Within the sys kit, the Folder component allows for the segregation of wiresheet logic, allowing you to create an additional wiresheet from the main wiresheet

1. Drag the Folder components onto the main wiresheet.

2. Rename the component in the Properties Pane to "Test1," and press return.

3. Double-click the component, and a new blank wiresheet appears which shows the contents of your new folder. At the top of the wiresheet is a new tab with the name of the "Test1" folder.
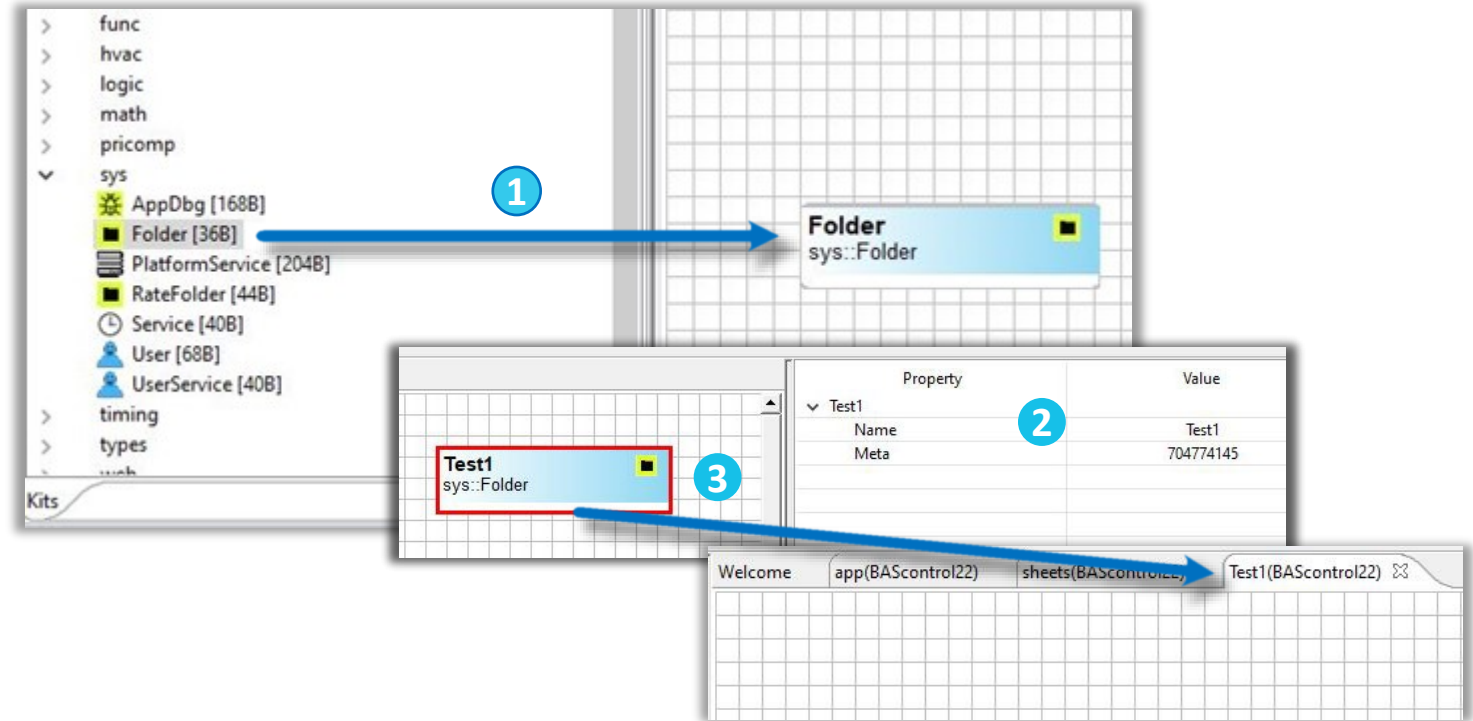
Creating a Blank Wiresheet (cont.)

The Rate Folder has the same attributes of a Folder except in terms of execution.
With a Folder, the logic within the folder is executed once per scan cycle just like any other logic in the application. However, with a Rate Folder the execution of the Rate Folder can by skipped by configuring the AppCycleToSkip slot.

For example:

If AppCycleToSkip = 1, then the execution of the logic within the Rate Folder will only occur every other scan cycle.
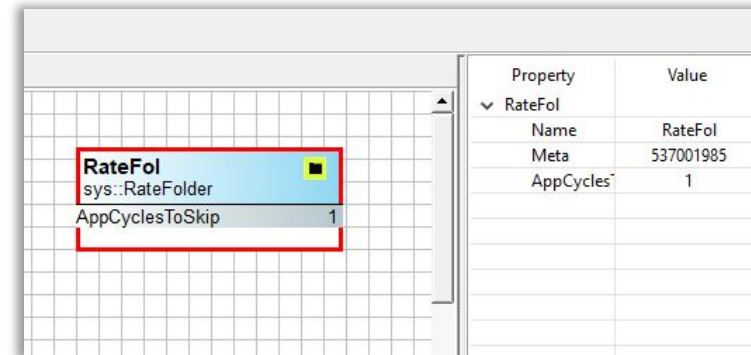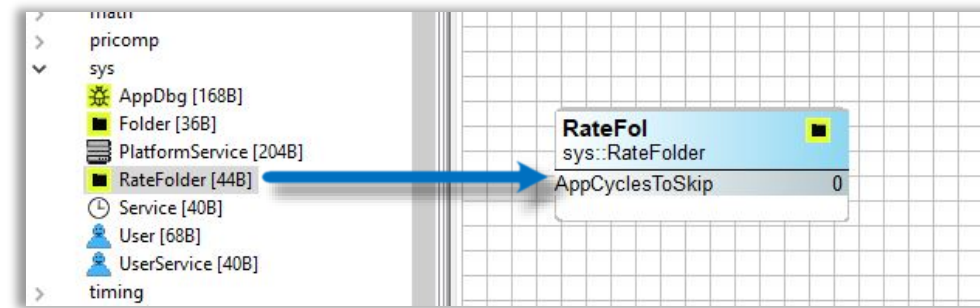
Updating a Configurable Component Value

To update a component value:

1. Click the Slots tab and review the Facets column. Slots with the Facet [config] can be configured from the default value. Ignore the meta slot.

2. Return to the Properties tab.

3. Set your new value. In this example, Diff = 5.

4. Save your application before closing your program, otherwise the Value will return to its default state.

Name	Type	Facets
Tstat		
meta	int	[config]
diff	float	[summary, config]
isHeating	bool	[summary, config]
sp	float	[summary, config]
cv	float	[]
out	bool	[readonly]
raise	bool	[readonly]
lower	bool	[readonly]

Properties Links **Slots**   ①

Tstat	
hvac::Tstat	
Diff	5.0
IsHeating	false
Sp	0.0
Cv	0.0
Out	false
Raise	false
Lower	false

Property	Value
⌄ Tstat	
Name	Tstat
Meta	788791297
Diff	5.0 ③
IsHeating	false
Sp	0.0
Cv	0.0
Out	false
Raise	false
Lower	false

② **Properties** Links Slots

Saving Your Wiresheet

To save your application:

1. Click the "Save to Controller" icon on the toolbar.

2. Click "OK."

The saved wiresheet will be stored in the emulator, and your program will be there the next time you launch it. Without saving, your work will be lost.
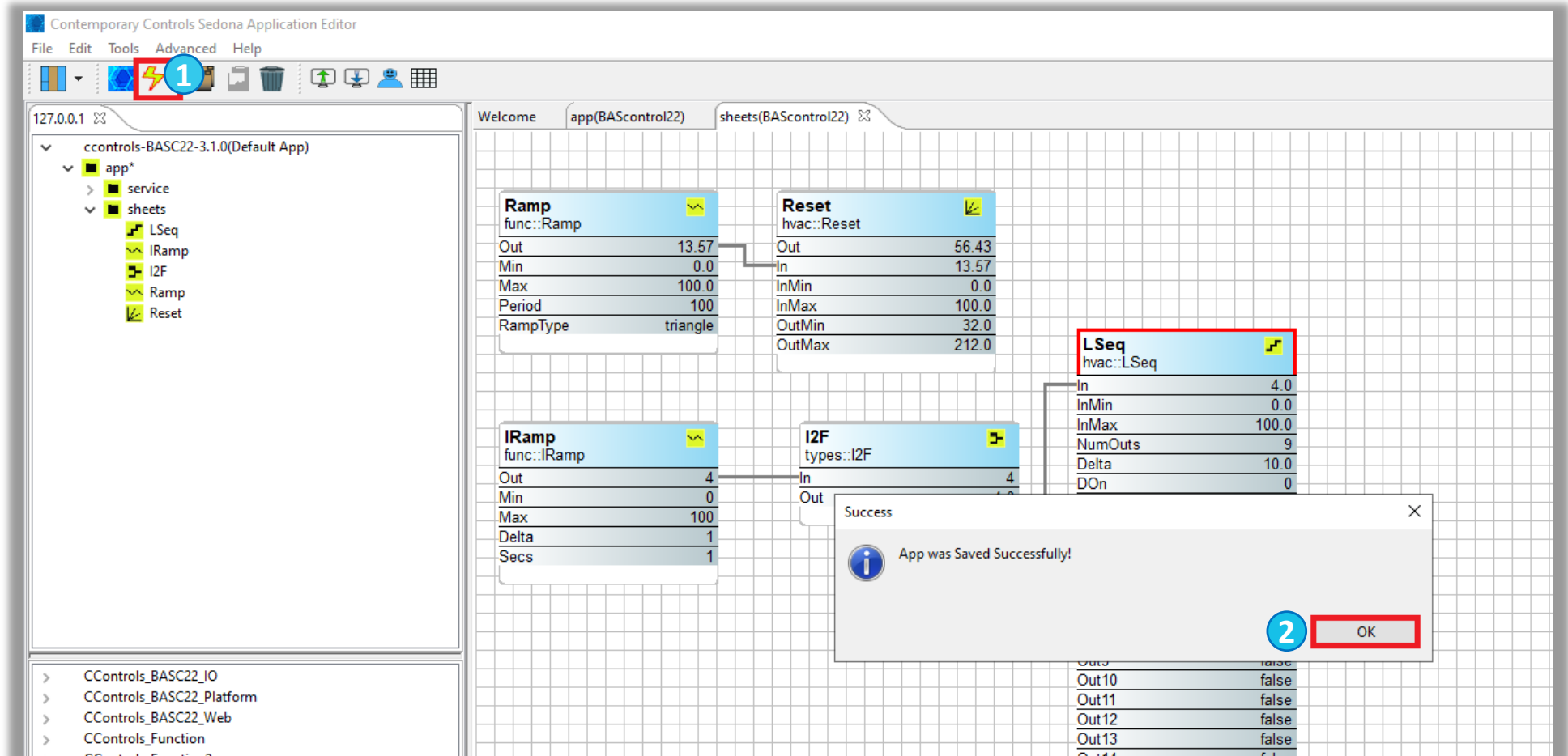
Saving Your Wiresheet to Your PC

You can also save your wiresheet to your PC. This allows you to store several versions of the Sedona program you are developing on your PC.

1. Click the "Save to PC" icon.

2. Enter a File name for your program and click "Save." Note: A .sax extension will be applied to the document.

3. You will see an acknowledgement of a successful Save, click "OK."

4. You can similarly use the "Load from PC" icon to upload SAX files from your PC to your wiresheet. The emulated web page can reflect changes as the Sedona application is running.
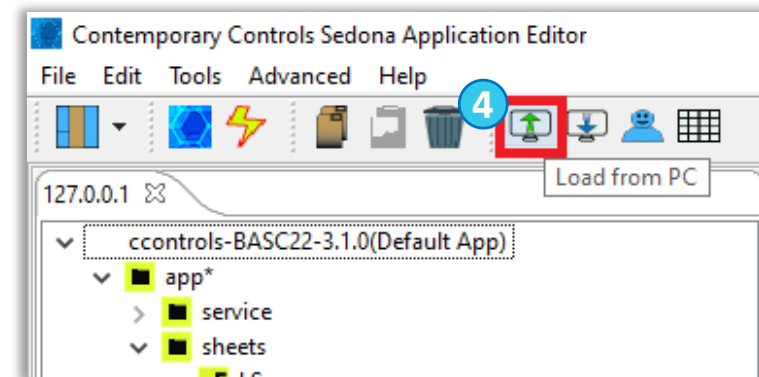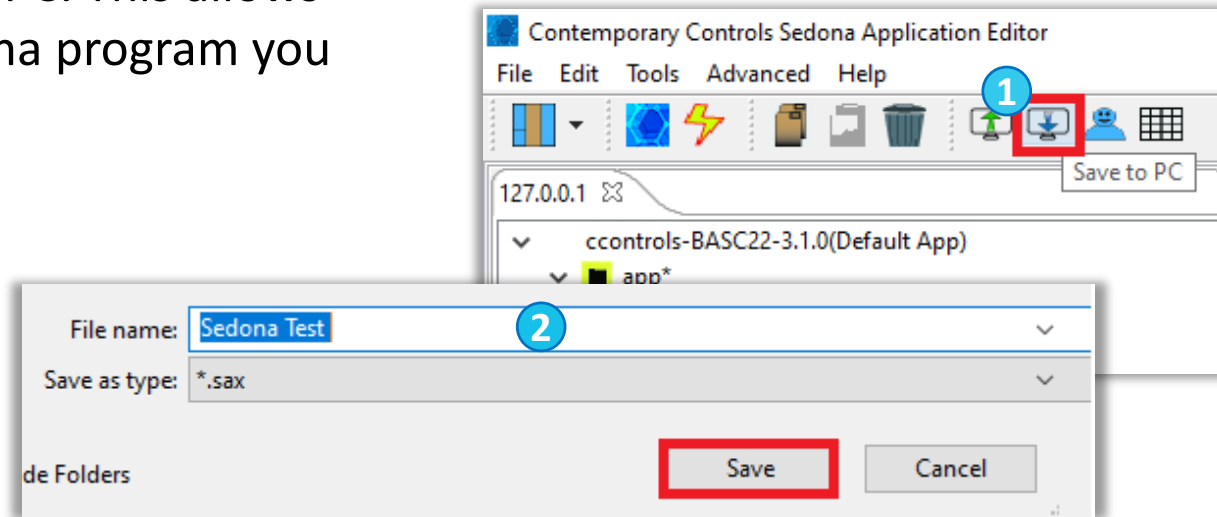
Saving Your Project

The BAScontrol Project Utility program (BASbackup) allows you to save a Sedona wiresheet and device configuration together as a single BAScontrol project file and restore it to a real or emulated controller.

1. To launch BASbackup, click "BASbackup" in the BASemulator. Or, with the BASemulator running, you can launch it from your desktop or your Start menu.

2. Use the default entry 127.0.0.1:5001 in the "BAScontrol IP Address" field, unless you specified a different address when you ran the BASemulator program. The "Unit Status" will change to ONLINE.

3. Click "Choose File," and enter the project file name, "Sedona Test" in this example.

4. Click "Backup."
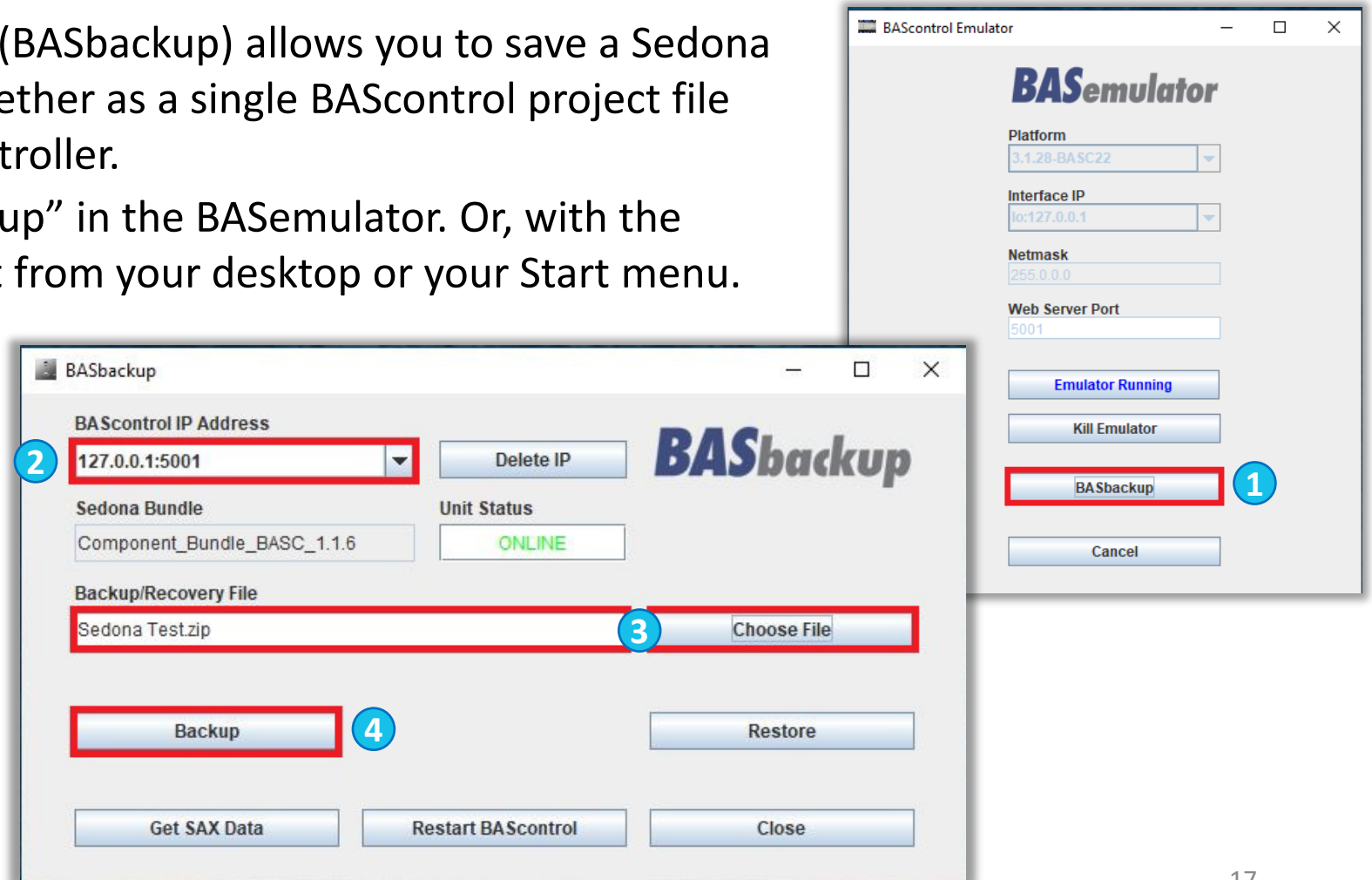
Saving Your Project (continued)

5. An Authorization window will appear from the targeted controller, authenticate with default credentials "admin/admin."

6. Click "OK." Status is updated on the screen in **blue text**. Once the status is "Complete," the Sedona wiresheet and device configuration you created in the emulator has been successfully backed up and stored in the project.

7. Click "Close."

You may keep the emulator running if you are going to perform more operations to the BASemulator. When you are done, you can close the Emulated Web Page and click "Kill Emulator" to terminate the program.
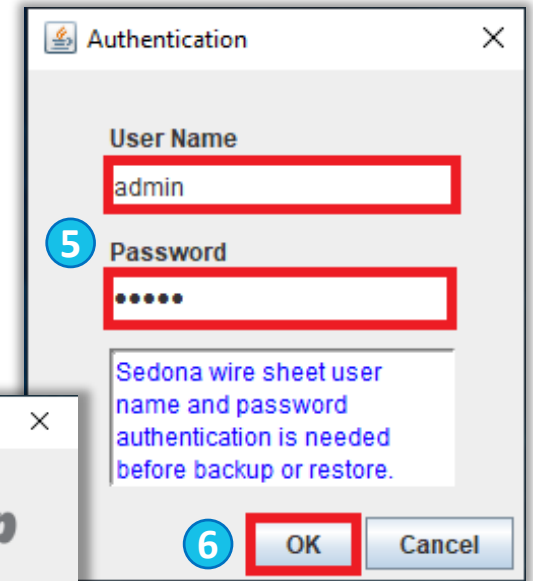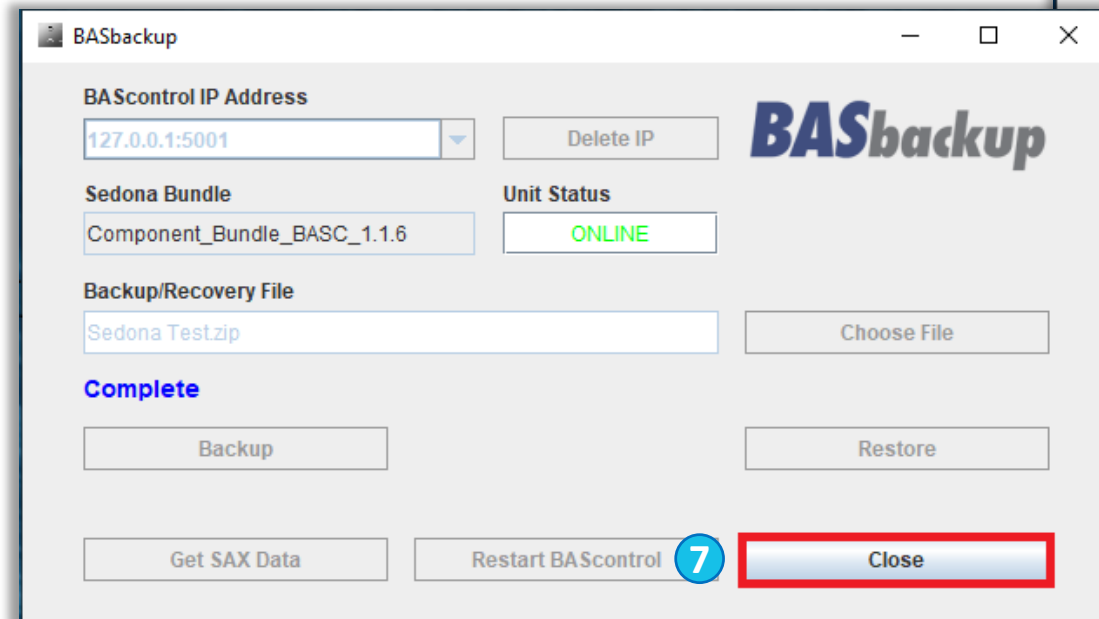
Saving Your Project to a Real Controller

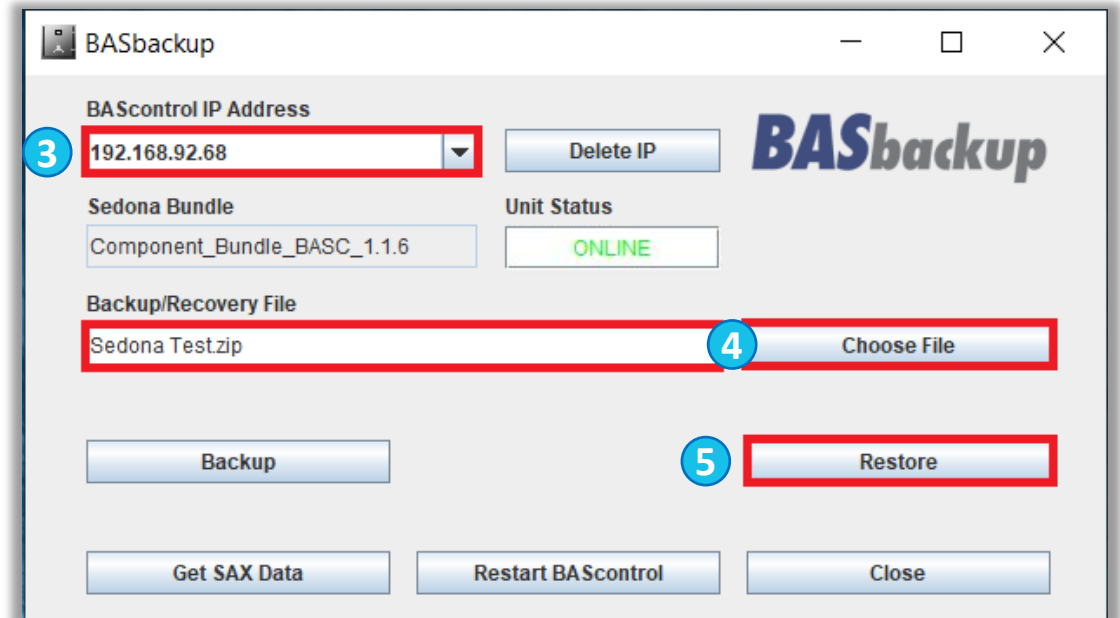To save/restore your project file to a real controller:

1. Power up and plug in your BAScontrol, BASpi, BASioT, and RTU controllers. Make sure your PC's LAN card settings are set to match the subnet of the controller. The default IP address of the controller is 192.168.92.68 with netmask of 255.255.255.0. Note: Contemporary Control's IP routers have a default IP of 192.168.92.1.

2. If needed, launch BASbackup.

3. Enter the BAScontrol unit's IP address in the "BAScontrol IP Address" field. "Unit Status" will change to ONLINE indicating that the BAScontrol unit is online, and you are ready to restore the project file.

3. If needed, click "Choose File" to select the recovery file. In this example, the backup file and recovery file are the same.
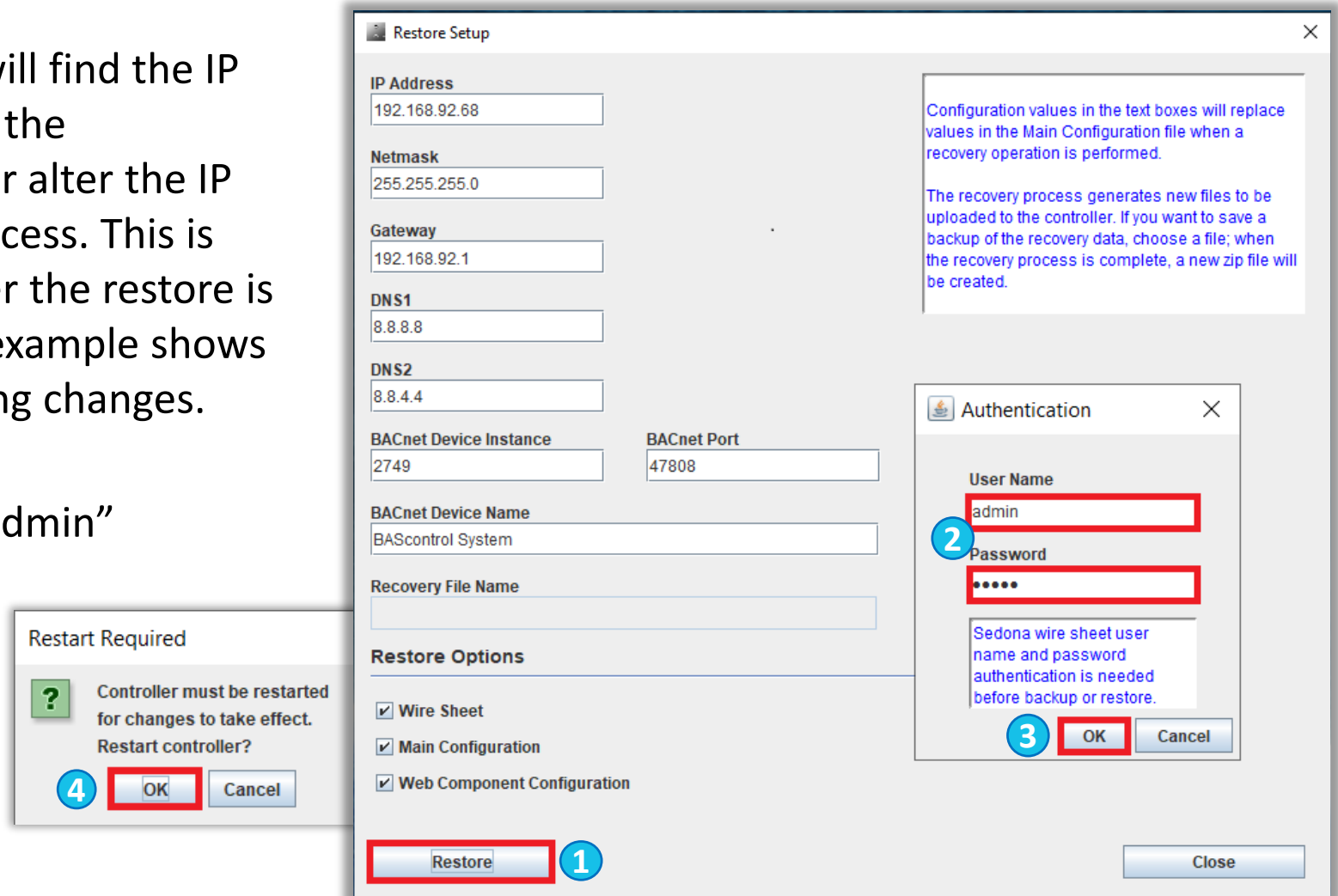
3. Click "Restore."

Saving Your Project to a Real Controller (continued)

From the "Restore Setup" window, you will find the IP and BACnet configuration you applied to the BASemulator's web page. You can keep or alter the IP address before you begin the restore process. This is the IP address the controller will use after the restore is complete and the unit is rebooted. This example shows how to restore the project without making changes.

1. Click "Restore."

2. Enter the default credentials "admin/admin" in the authorization window.

3. Click "OK."

4. When finished, reboot the device for changes to take effect. Click "OK" to reboot now or "Cancel" to reboot later.

This example shows how to makes changes to the configuration and save a recovery/backup copy:

1. Enter the IP and BACnet configurations of the target controller - IP address, subnet mask, default gateway, and (optional) DNS1 and DNS2.

2. For BACnet, enter a unique BACnet device instance and BACnet device name.

3. Click "Choose file" and enter a unique name for the new recovery file.

Note: A warning message appears when you change the IP address, or if you are about to overwrite an existing project file.

4. Click "Restore"

5. Enter the default login "admin/admin," then click "OK."

6. Click "OK" to reboot.

Summary — Saving Your Application and Project

- Save to Controller from the SAE
  - Saves a Sedona binary application file (app.sab.target) to an emulator or a real controller. A SAB file is only a machine-readable executable file.
- Save to PC/Load from PC from the SAE
  - Saves a Sedona source application file (app.sax) to your PC. A SAX file (also referred to as an application or App file) is human readable. When saving, you are required to provide a name for your file. Similarly, "Load from PC" uploads a SAX file from your PC into SAE.
- Backup/Restore from BASbackup
  - Saves configuration files specific to the BAScontrol, BASpi, BASioT, or RTU controller used, including all the non-Sedona configuration data, such as web page settings and IP address settings, to a single BAScontrol project file. When saving, you are required to provide a name for your file. The "Restore" function allows you to copy (clone) the project to a real or emulated controller.
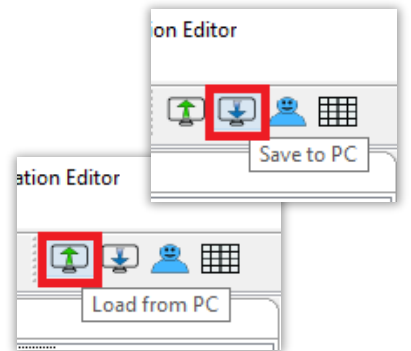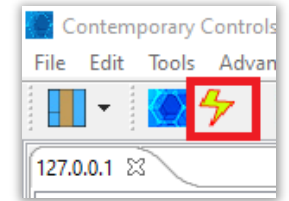
Thank You

Learn more about the BAScontrol Toolset and how to download these software tools at:
https://www.ccontrols.com/basautomation/bastools.php
or visit
www.ccontrols.com