Manage startup-shutdown methods

- Administration > Create > Startup Shutdown Method
- Alternative: Administration > Device Management > Instrument System editor > Startup Shutdown tab

You prepare the system for operation, standby, or shutdown by controlling instrument parameters such as the solvent flow rate, and composition. You can do this manually from the System Console or you can create a startup-shutdown method to control the system. It is not recommended to use both the startup method and the console, as it may duplicate priming efforts.

With a startup-shutdown method active:

- Startup and shutdown actions can run on a schedule.
- You can select state changes from the system control panel.
- Prior to running a sample list, if the system is not ready, the startup-to-ready action runs automatically.

For example, to resume operation each day after an overnight shutdown, you can use a startup-shutdown method to schedule and run these pre-acquisition tasks:

- Prime solvents and seal washes
- Prime sample and wash syringes
- Equilibrate columns
- Warm up the detector lamp
- Put the mass spectrometer in Operate mode

Before you can use a startup-shutdown method, you must define the flow rates, seal washes, pump-priming actions, temperatures, and voltages required to move to each state for each instrument in the instrument system. The states are intended for the following uses:

- Ready – ready to run samples
- Standby – a lower energy state used for periods of inactivity
- Maintenance – the instrument system is prepared for power off

This topic includes the following subtopics:

- Enable and schedule a startup-shutdown method
- Upload startup-shutdown method settings to the instruments
- Manually run a startup-shutdown method
- Modify a startup-shutdown method
- View the startup-shutdown method log

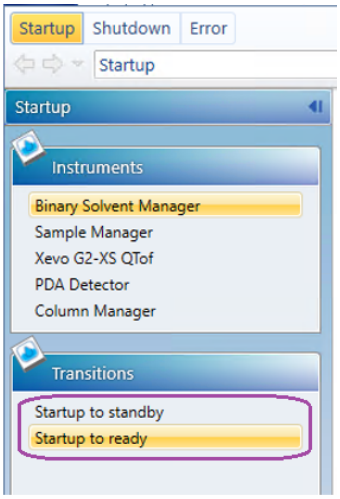
Best practices for startup-shutdown methods

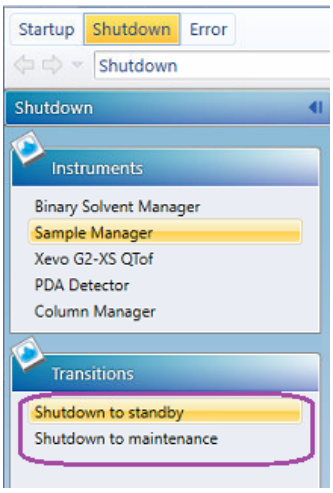
Before configuring the startup-shutdown method for your instrument system, plan the required actions and settings. See the system guide provided with your system for more information. The startup-shutdown methods are used for the following typical situations:

Situation	Action
Shut down for less than 24 hours	Shutdown to standby
Shut down for more than 24 hours	Shutdown to maintenance
Shut down to change solvents	Shutdown to standby
Resume operation after changing solvents	Startup to ready
Resume operation after a longer than 24-hour shutdown	Startup to standby
Resume operation after less than 24-hour shutdown	Startup to ready

Create a startup-shutdown method

A startup-shutdown method includes two startup states (or transitions), two shutdown states (or transitions), and an error state.



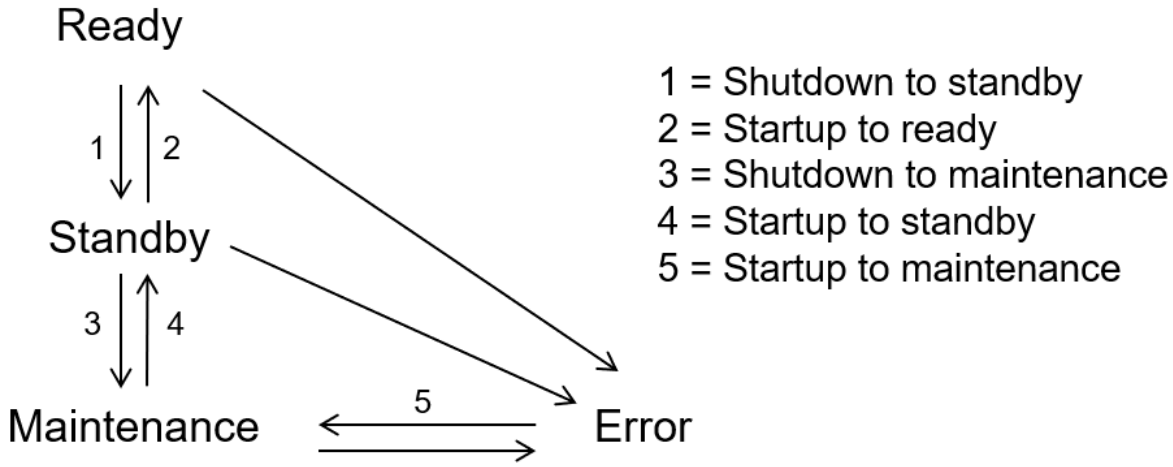


For each state, you must specify the actions and settings you need for each instrument in a system. Bear in mind that a system can be in any state before you apply these settings. For example, even though an instrument last started to Ready mode, it is possible that since then changes to its settings were made.

Note: All startup-shutdown changes move from or to Standby mode. See Figure 1. A selection is available to move the instrument system from Maintenance mode to Ready mode. Nevertheless, in changing it actually moves from Maintenance mode to Standby mode, then Standby mode to Ready mode. The same applies when moving from Ready mode to Maintenance mode.

Rule: When you specify settings for going into or out of standby (such as column temperature or sample temperature), the settings are made identical for both the Startup to standby and Shutdown to standby states.

Figure 1. Diagram of the mode changes



Due to the mandatory passage of states described in Figure 1, if priming is programed in both the startup to ready and the startup to shutdown method, then the system will be primed twice, once for each state it passes through. If the system is in maintenance mode and startup to ready is selected from the instrument control panel, then startup to standby will first be run and then startup to ready will be run. See the Table 1 for a description of programs that will be run to get to the ready state.

Table 1 Describes the steps taken when the startup to ready method is initiated from the instrument control panel from different startup states:

Startup Status in the instrument control panel	**Steps from Figure 1 that will be taken**
Standby	2
Ready	2
Maintenance	4 then 2
Error	5 then 4 then 2

Tip: To avoid priming twice do not select any priming for the Startup to Standby method and do not run system startup from the console with the startup method enabled.

Prerequisite: To create or modify startup-shutdown methods your role must include the "Create startup-shutdown method" permission.

To create a startup-shutdown method:

1. From the Administration tab, click Create > Startup Shutdown Method, and follow the wizard's instructions.

   Result: The startup-shutdown method appears in a new application tab. The Summary work area shows the initial startup sequence.

2. Select a startup, shutdown, or error option.

   Rule: An error during acquisition triggers the error method. The Error tab contains only property settings; it cannot trigger actions, ex. characterize needle seal.

3. In the task pane, select each instrument in turn and make the required settings.

   Tips:

- The work area displays the settings and actions available for the specified instrument. See the system guide provided with your system for guidance on settings.

- The temperature related operations that you specify for moving to or from Standby mode are made consistent in the UNIFI software, regardless of whether running startup to standby or shutdown to standby.
- After specifying all settings, click Save.

Enable and schedule a startup-shutdown method

You can run startup-shutdown transitions manually, or set them to run on a schedule.

To enable and, optionally, schedule a startup-shutdown method:

1. From the Administration tab, click Device Management > Instrument Systems.

2. Select an instrument system, and click Modify.

3. Click the Startup and Shutdown tab.

4. Click Enable.

5. Select a startup-shutdown method.

6. Enable the schedule for those operations.

   Tip: Once the schedule is active, where a sample-list acquisition is in progress, the scheduled transition does not run until the acquisition finishes.

7. Select a startup time, shutdown time, or both.

8. From the schedule, select the days on which the method must run.

9. Click Save.

Manually run a startup-shutdown method

From the control panel, using the drop-down menu, you can perform startup-shutdown method actions.

Note: All startup-shutdown changes move from or to Standby mode. See Figure 1 and Table 1. A selection is available to move the instrument system from Maintenance mode to Ready mode. Nevertheless, in changing it actually moves from Maintenance mode to Standby mode, then Standby mode to Ready mode. The same applies when moving from Ready mode to Maintenance mode. The temperature settings that you specify for moving to Standby mode are made consistent in the UNIFI software, regardless of whether the startup-shutdown change is from, or to, Standby mode.

Modify a startup-shutdown method

Startup-shutdown methods are retrieved for editing by browsing for them in UNIFI Explorer. From found, right-click to open the method and modify its parameters.

To modify a startup-shutdown method:

1. From My Work, in the Task pane, below File, click Browse.
2. Locate your startup-shutdown method, right-click and select Open.
3. Adjust the settings as required.
4. To overwrite the existing method, from the save menu, select Save As.
5. Leave the method name as it is.
6. Click OK.
7. When prompted to overwrite the existing method, click Yes.

View the startup-shutdown method log

The instrument system's last startup-shutdown state appears in the Summary control panel.

To view the startup-shutdown method history:

1. From the Administration tab, click My Work > Instrument Systems.
2. Double click on the Instrument System that is online or select open icon in top right (pic)
3. In the System Console, ensure that the system is selected and not an instrument.
4. In the menu, click Startup Shutdown Log.
5. Click on a log entry to view its details.

- Prepare instrument systems for startup and shutdown
- Create and modify an instrument system
- Working with instrument systems