



# SeaTools™ SSD GUI

User Guide

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January 2019

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## Revision History

Version and Date	Description of Changes
Rev C, January 2018	Updated note on the following section: <ul style="list-style-type: none"><li>■ <a href="#">Section 3.6, Set Tunable Capacity</a></li></ul>
Rev B, July 2018	Added the following feature updates: <ul style="list-style-type: none"><li>■ <a href="#">Section 3.6, Set Tunable Capacity</a></li></ul>
Rev A, July 2018	First release of the document.

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# 1. Introduction

This document describes how to use Seagate's SeaTools™ SSD GUI, Release 3.0, a graphical user interface tool for managing Seagate solid state drives (SSDs) on a system. This chapter contains the following subsections:

- [Overview](#)
- [Supported Systems](#)
- [Installation](#)
- [Usage](#)

## 1.1 Overview

SeaTools SSD GUI runs on Microsoft Windows and Linux operating systems and provides the following features for managing SSDs:

- Displays SSD information such as model, capacity, disk usage, temperature and lifetime
- Monitors the health of SSD drives
- Displays Self-Monitoring Analysis and Reporting Technology (SMART) attribute and identification information
- Maintains an event log
- Runs configuration tasks, such as exporting logs
- Performs firmware updates

**NOTE** SeaTools SSD GUI is designed to work only with select Seagate SSDs.

## 1.2 Supported Systems

The SeaTools SSD GUI is supported on the following operating systems:

- Windows
  - Windows
- Linux
  - Ubuntu
  - RedHat
  - CentOS

## 1.3 Installation

SeaTools SSD GUI can be installed on Windows or Linux computers. This section provides a set of screenshots showing the Windows installation procedure, but the procedure is identical for both operating systems.

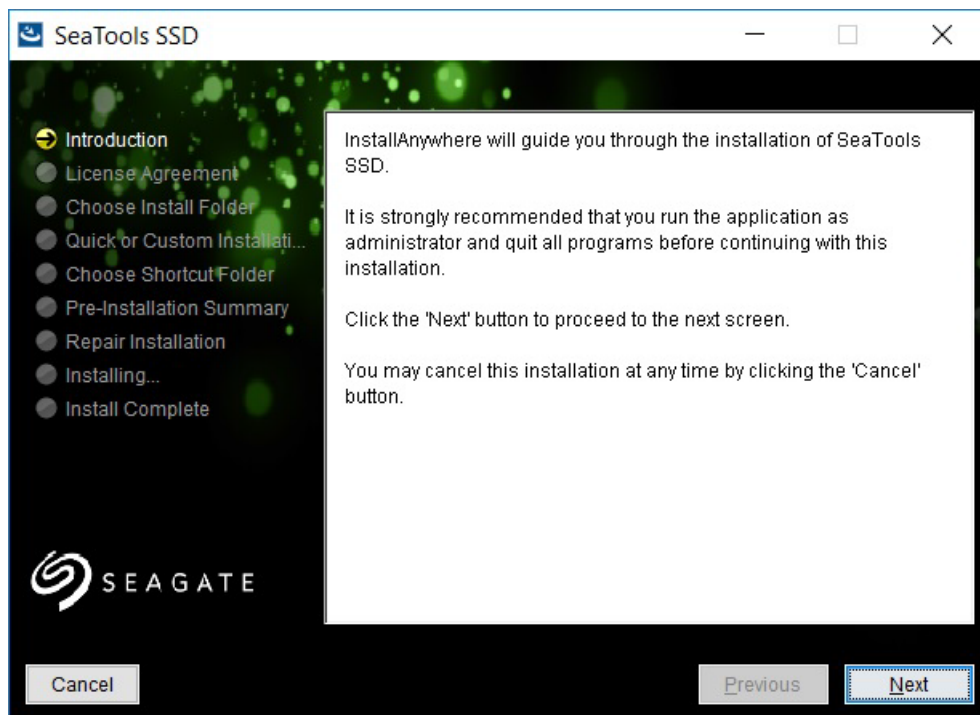
### To install SeaTools SSD GUI

1. Run the installation file.
  - For Windows, run **SeaTools\_SSD.exe**.
  - For Linux, run **SeaTools\_SSD.bin**.

**NOTE** If the installation program determines that a version of SeaTools SSD GUI is already installed on your system, it prompts you to either remove the program or update it. If you see this prompt, select **Remove** or **Update**.

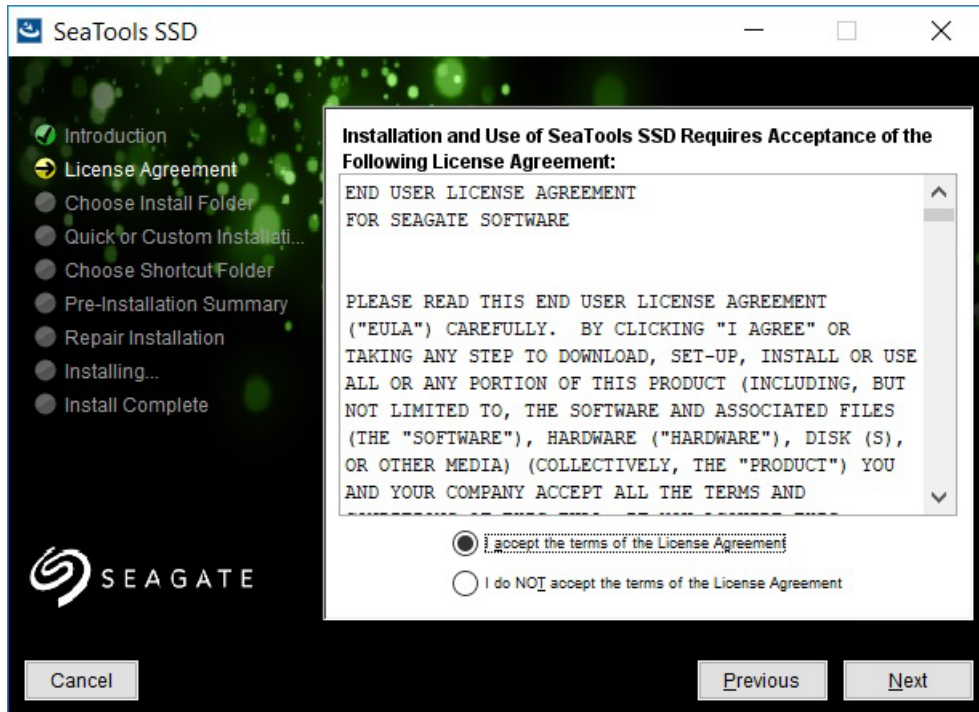
2. Read the text shown below and click **Next** when prompted.

Figure 1 Installation Introduction



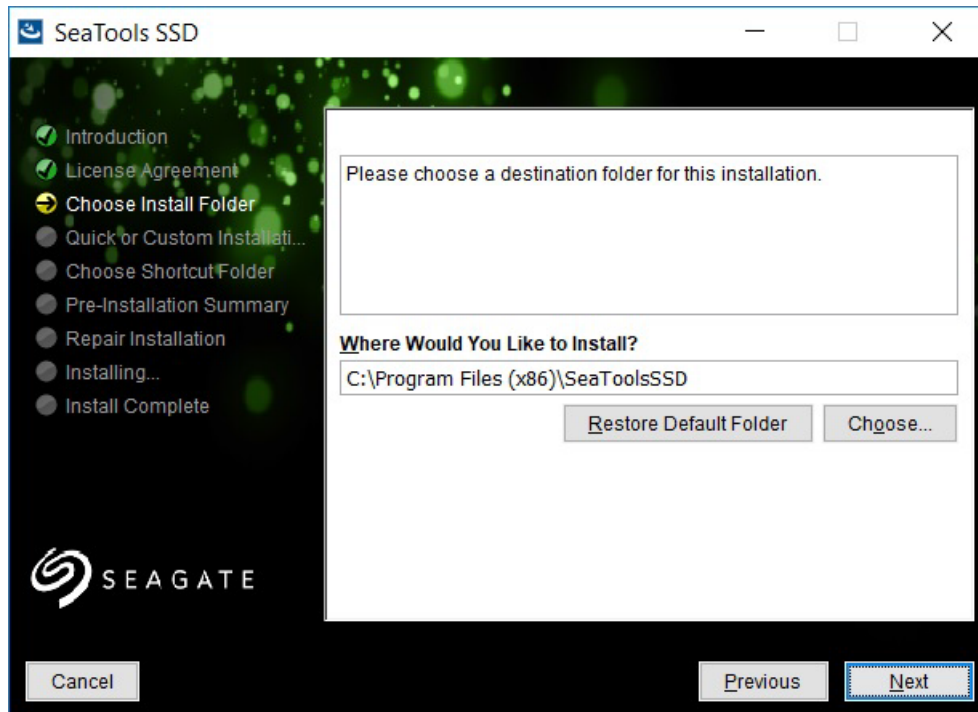
3. Read and accept the user license agreement and click **Next** when prompted.

**Figure 2 Installation License Agreement**



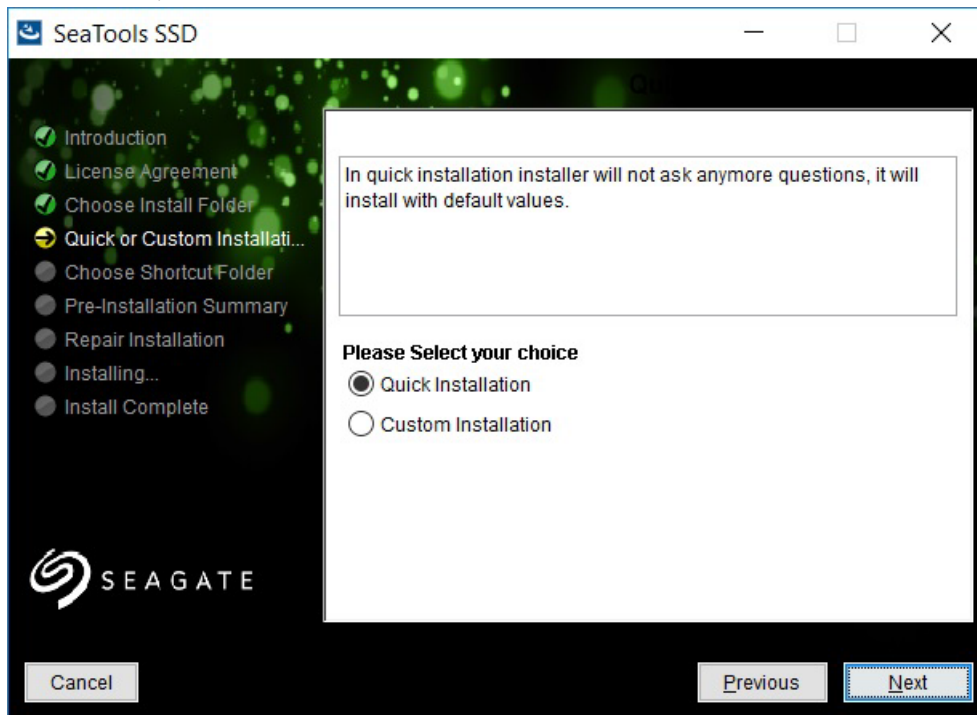
4. When the tool prompts you, provide an installation location:
  - To accept the default installation path, click **Next**.
  - To select a different path, type the new path and click **Next**.

**Figure 3 Installation Destination**



- 5. When the tool prompts you:
  - To use the default settings, select **Quick installation** (recommended). See Step 7.
  - To have more control over installation options, select **Custom Installation**. See Step 6.

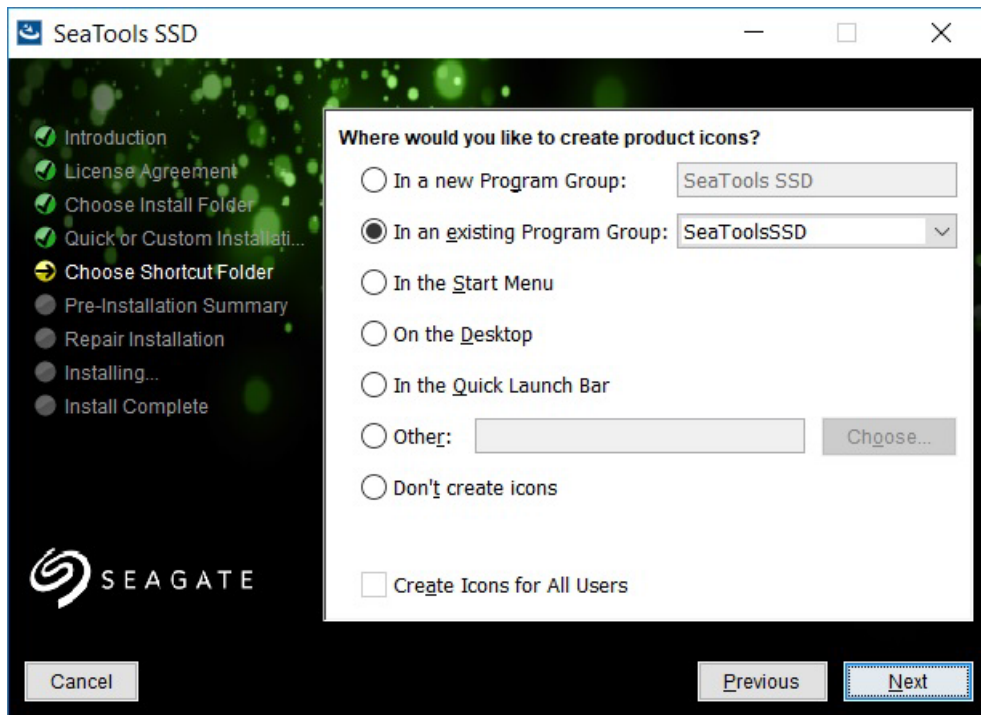
**Figure 4 Installation Type Selection**





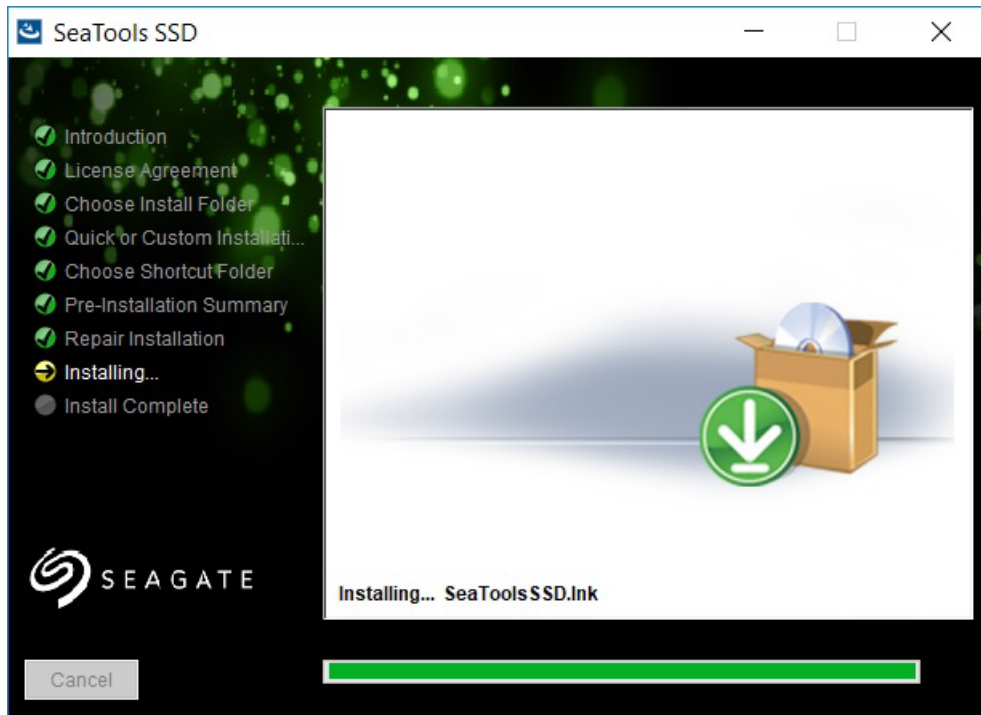
6. If you chose custom installation, you can choose location of product icons as shown in the figure below.

Figure 5 Custom Installation



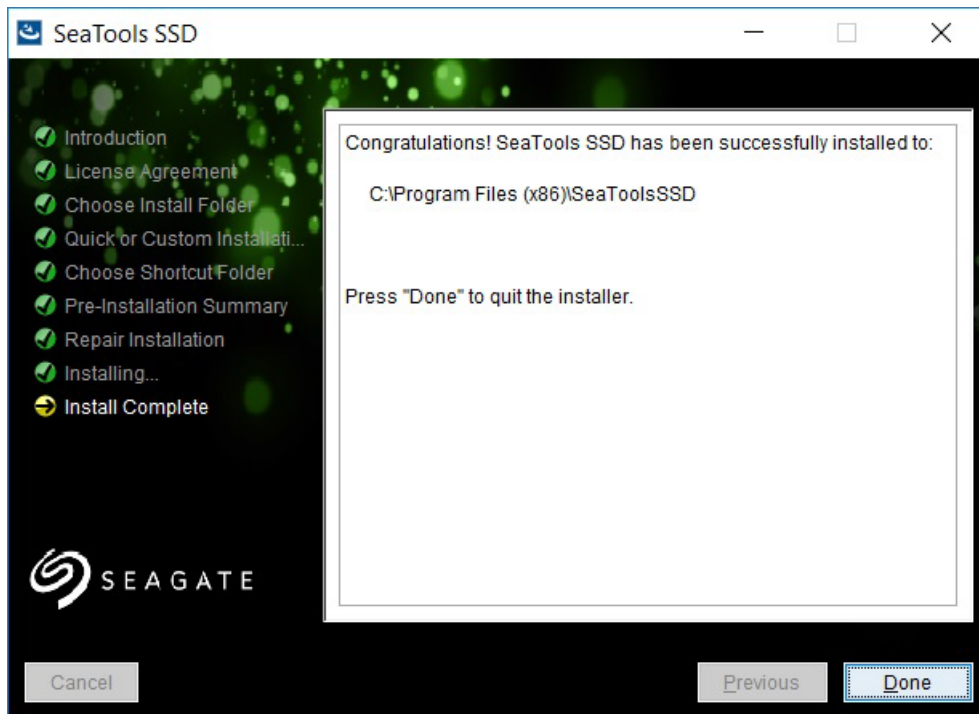
The installer shows the following image during the installation process.

**Figure 6 Installation Progress**



7. Click **Done** when prompted as shown below.

**Figure 7 Installation Procedure Done**



The installation process is complete.

## 1.4 Usage

After you install the SeaTools SSD GUI, the SeaTools front page launches automatically. The SeaTools SSD GUI page also opens automatically when you reboot your PC.

**NOTE** To monitor your drives, you must have SeaTools running.

## 2. Navigation

This chapter contains the following subsections:

- [Overview](#)
- [Summary Page](#)
- [Operations Page](#)
- [Events Page](#)
- [Settings Page](#)
- [About Page](#)

### 2.1 Overview

The following figure shows the SeaTools SSD Summary page, and the navigation bar. The navigation bar appears at the top of every screen, and includes links to these pages: SUMMARY, OPERATIONS, EVENTS, SETTINGS, and ABOUT. To access each page, click the link in the navigation bar.

**NOTE** To access online help, click the question-mark icon at the far right of the navigation bar.

**Figure 8 Summary Page**

## 2.2 Summary Page

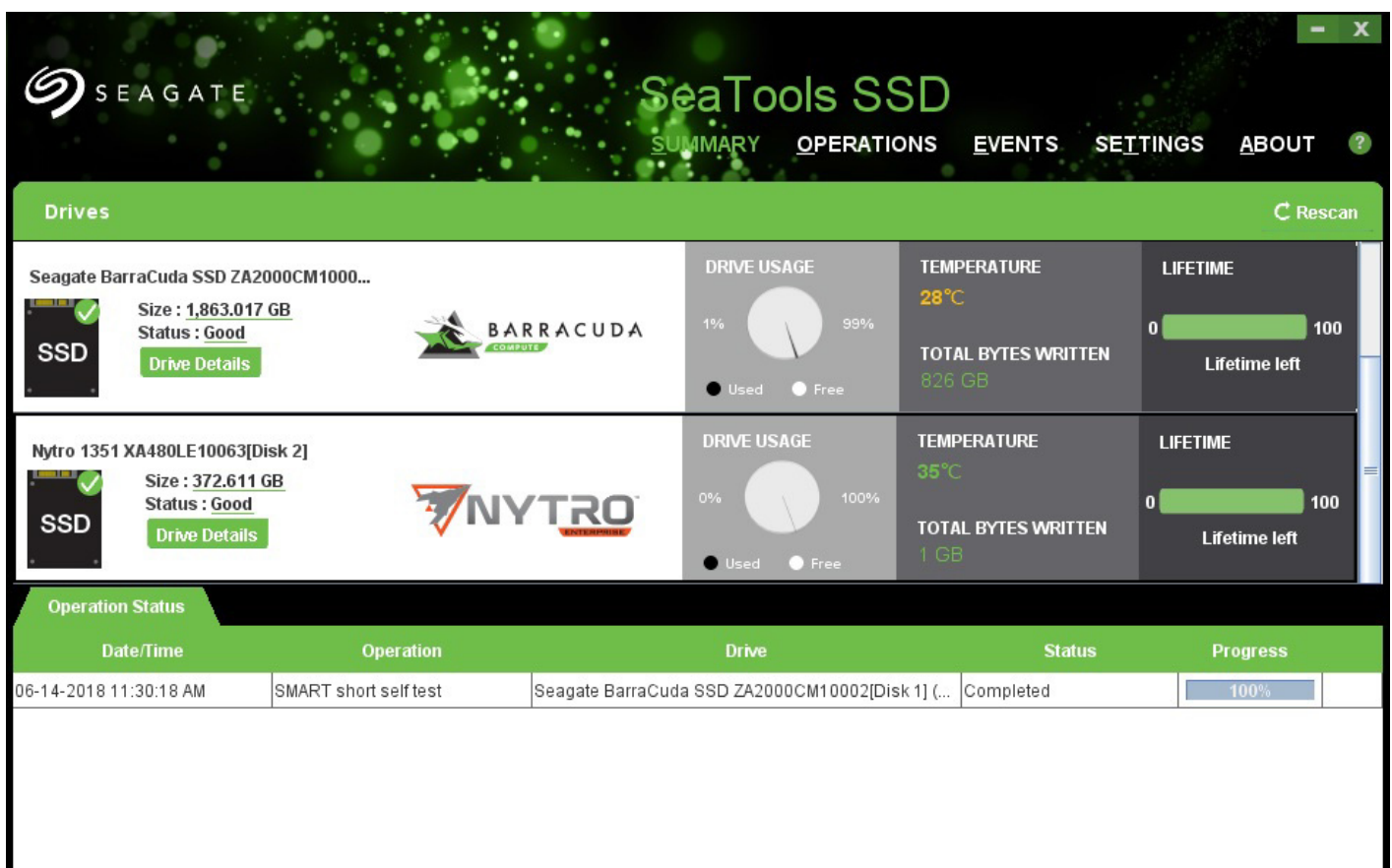
This section describes the Summary Page. It contains the following subsections:

- [Overview](#)
- [Summary Dashboard](#)
- [Operation Status Panel](#)

### 2.2.1 Overview

The following figure shows the Summary page, which appears when SeaTools SSD GUI first opens.

Figure 9 Summary Page



The Summary page provides basic information about the installed and supported SSD drives. Summary information for each installed SSD appears across the top of the page, in horizontal dashboards.

The tabs in the lower part of the page provide basic information about the events and operational status of the selected SSD.

The Summary page is described in more detail in the next section.

## 2.2.2 Summary Dashboard

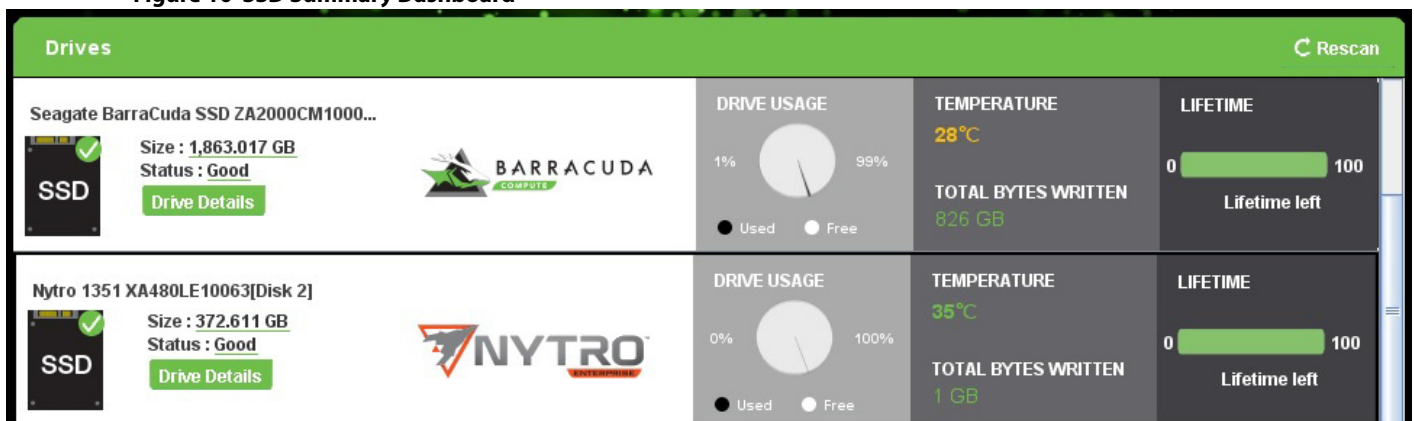
This section contains the following subsections:

- [Overview](#)
- [Operation Status](#)

### 2.2.2.1 Overview

The summary dashboard, as shown below, provides at-a-glance information on the overall health and general state of each installed SSD. To look for drives that are installed but not yet listed, click **Rescan**.

**Figure 10 SSD Summary Dashboard**



The GUI displays the following information in panes on the dashboard:

- General Information
  - Manufacturer and model
  - Size (capacity)
  - Status
    - Good
    - Warning
    - Error
- Drive Usage
 

This chart shows the percentage of capacity that is used and free.
- Temperature
- Total Bytes Written
- Lifetime
 

This value displays as the percentage of time left in the life expectancy of the selected SSD.

## 2.2.2.2 Operation Status

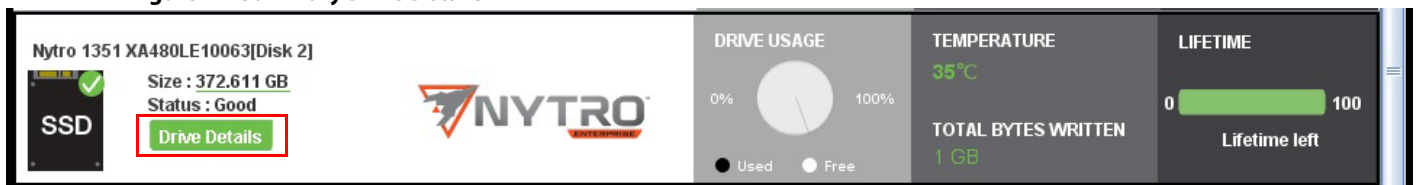
This section contains the following subsections:

- [Overview](#)
- [Drives Panel](#)
- [Interface Tab](#)
- [SMART Tab](#)
- [Power Tab](#)
- [Security Tab](#)

### 2.2.2.2.1 Overview

To see more information about a selected drive, click **Drive Details**, as outlined in red in the figure below.

**Figure 11 Summary Drive Details**



The Drive Details button opens the Drives page. The Drives page allows you to learn about—and modify—drive settings, such as, interface, SMART, and settings for power and security.

### 2.2.2.2.2 Drives Panel

The Drives panel appears by default when you click the **Drive Details** button in the Summary page. It provides more detailed information about the selected SSD's hardware and driver than you can see in the summary dashboard. The following figure shows the Drives panel with the Details tab selected.

Figure 12 Drives Page

The screenshot shows the SeaTools SSD interface. At the top, there's a navigation bar with 'SUMMARY', 'OPERATIONS', 'EVENTS', 'SETTINGS', and 'ABOUT'. Below this is a 'Drives' section with a '< Back' button. The main content area shows a drive: 'Seagate BarraCuda SSD ZA2000CM10002[Disk 1] (1,863.017 GB)' with a status of 'Good'. Below the drive name are tabs for 'Details', 'Interface', 'SMART', 'Power', and 'Security'. The 'Details' tab is active, showing an 'Asset' section with the following information:

Drive Description	Seagate BarraCuda SSD ZA2000CM100...	WWN	5_000c50_08142d18f
Serial Number	NB120GMT	Controller Type	SF-2000
Model Number	Seagate BarraCuda SSD ZA2000CM100...	Chip Stepping	NA
Form Factor	2.5 inch nominal form factor	Used Space	8.693 GB
Firmware Version	STAS1024	Free Space	1,854.323 GB

Below the asset information is a 'Version' section with the following details:

Driver Name	Microsoft	Release Date	Wednesday, June 21, 2006 12:00:00 AM
Driver Version	10.0.15063.850		

The Drives panel includes three distinct sections: name and status of selected drive in the top section, asset information the middle section, and driver version information in the lower section. The following table describes each portion of the Details tab.

Table 1 Details Page Sections

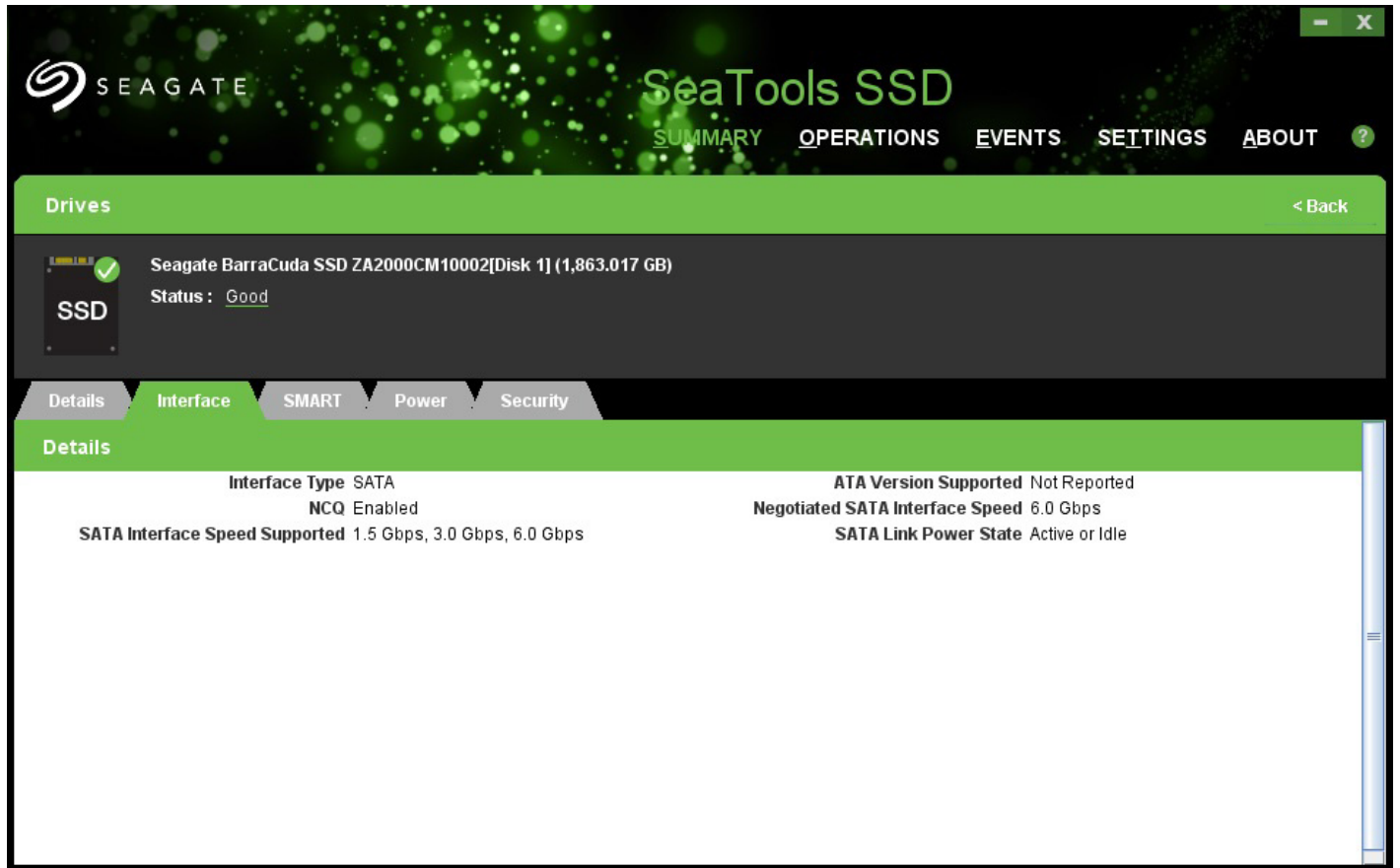
Portion	Description
Selected Drive and Status	Identifies the selected drive.
Asset	Provides hardware information about the selected SSD, including these properties: <ul style="list-style-type: none"> <li>■ Description</li> <li>■ Serial number</li> <li>■ Model number</li> <li>■ SSD form factor (if known): For example, 2.5-in, 3.5-in, or 5.25-in</li> <li>■ SSD firmware version</li> <li>■ World Wide Name (WWN): A unique number that identifies the SSD to the operating system.</li> <li>■ SSD controller type and version</li> <li>■ Used space and free space on the SSD</li> </ul>
Version	Includes the SSD driver name, driver version, and release date. Refer to the driver information to determine if a driver upgrade is required.



### 2.2.2.2.3 Interface Tab

The Interface tab provides information about the selected drive's interface to the host. The following figure shows the Drives page with the Interface tab selected.

Figure 13 Interface Tab



The Interface tab displays the following information:

- Interface Type
- Native Command Queuing (NCQ) state
- SATA interface speed supported (Gb/s)
- ATA version supported
- Negotiated SATA interface speed
  - Any speed slower than 6Gb/s indicates that the host connection is limiting the SSD performance.
- SATA Link Power State

#### 2.2.2.2.4 SMART Tab

The SMART tab displays information about Self-Monitoring, Analysis, and Reporting Technology (SMART) attributes for the selected SSD. The following figure shows the Drives panel with the SMART tab selected.

Figure 14 SMART Tab

The screenshot shows the SeaTools SSD interface. At the top, the Seagate logo and 'SeaTools SSD' title are visible. Below the title, there are navigation tabs: SUMMARY, OPERATIONS, EVENTS, SETTINGS, and ABOUT. The main content area is titled 'Drives' and shows a 'Seagate BarraCuda SSD ZA2000CM10002[Disk 1] (1,863.017 GB)' with a status of 'Good'. There are 'Refresh' and 'Export SMART' buttons. Below this, there are tabs for 'Details', 'Interface', 'SMART', 'Power', and 'Security'. The 'SMART' tab is selected, displaying a table of SMART attributes.

ID	Attributes	State	Normalized	Worst	Threshold	Raw
1	UECC Error count	OK	100	100	50	0
9	Power-On Hours (POH)	OK	100	100	0	180 Hrs
C	Device Power Cycle Count	OK	100	100	0	45
10	Spare Blocks Available	OK	100	100	0	169
11	Remaining Spare Blocks	OK	100	100	0	169
A8	Sata Phy Error Count	OK	100	100	0	0
AA	Bad Block Count	OK	100	100	10	1135
AD	Erase Count	OK	100	100	0	65538
AE	Unexpected Power loss Count	OK	100	100	0	15
B1	Wear Range Delta	OK	0	0	0	0%
C0	Unexpected Power loss Count	OK	100	100	0	15

The SMART monitoring system detects and reports various indicators of disk drive reliability with the goal of anticipating disk failures. SMART warns you about possible disk failure so you have time to back up your data.

Click **Refresh** to update the SMART values of the selected drive.

Click **Export** to create a simple CSV file containing the SMART values of the selected drive. (For more information about exporting logs, see Section 3.4.1, "Export Logs.")

### 2.2.2.2.5 Power Tab

The Power tab provides information about the power state and power capabilities of the selected SSD. The following figure shows the Drives page with the Power tab selected.

Figure 15 Power Tab

The power tab lists the current power state for the selected SSD and the total hours that the SSD has been powered on. The tab also indicates the types of power management that the SSD supports and which types are currently enabled. The following table describes the different power-management features.

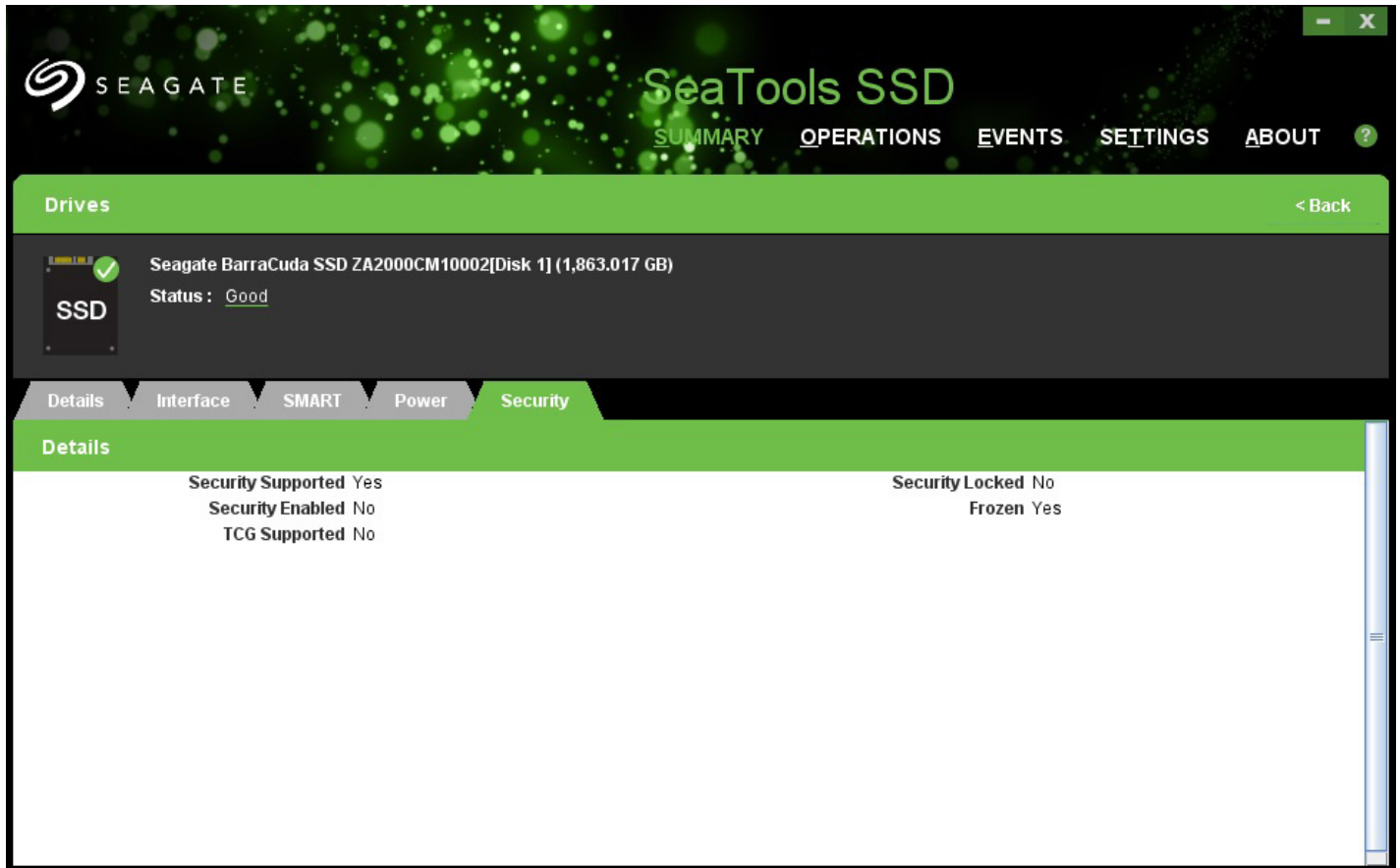
Table 2 Power Management Features

Feature	Description
APM	Advanced power management. The APM state value indicates whether advanced power management is enabled. You can edit the APM settings by clicking on the pencil icon next to the APM State property. See <a href="#">Section 3.5 Manage Advanced Power Management State</a> for more information.
HIPM	Host-initiated power management
DIPM	Device-initiated power management
PUIS	Power-up in standby

### 2.2.2.2.6 Security Tab

The Security tab describes the password security features of the selected SSD. The following figure shows the Drives page with Security tab selected.

Figure 16 Security Tab



The following table describes the security feature indicators on the Security tab.

Table 3 Security Feature Indicators

Indicator	Description
Security Supported	Indicates if the SSD firmware supports User password and Recovery password.
Security Enabled	Indicates if you have created passwords for this SSD.
TCG Supported	Indicates if the Trusted Computing Group (TCG) is supported. TCG is a set of SATA commands that control the passwords and security on the SSD.
Security Locked	Indicates if the SSD is currently locked and needs to be unlocked with the password.
Frozen	Indicates an SSD has frozen because too many wrong passwords in a row were entered, or because of a Windows SATA command during power cycle. To unfreeze the SSD, you must power cycle it. When an SSD is frozen, you cannot unlock it, set a password, or clear a password. <b>NOTE</b> Windows operating systems always freeze the drive as part of their overall security setting. In this case, you do not have to power cycle the SSD.

## 2.2.3 Operation Status Panel

This section contains the following subsections:

- [Overview](#)

### 2.2.3.1 Overview

When SeaTools SSD performs or experiences an event, it records the event in the lower panel of the Summary page. The following figures shows the Operations Status panel.

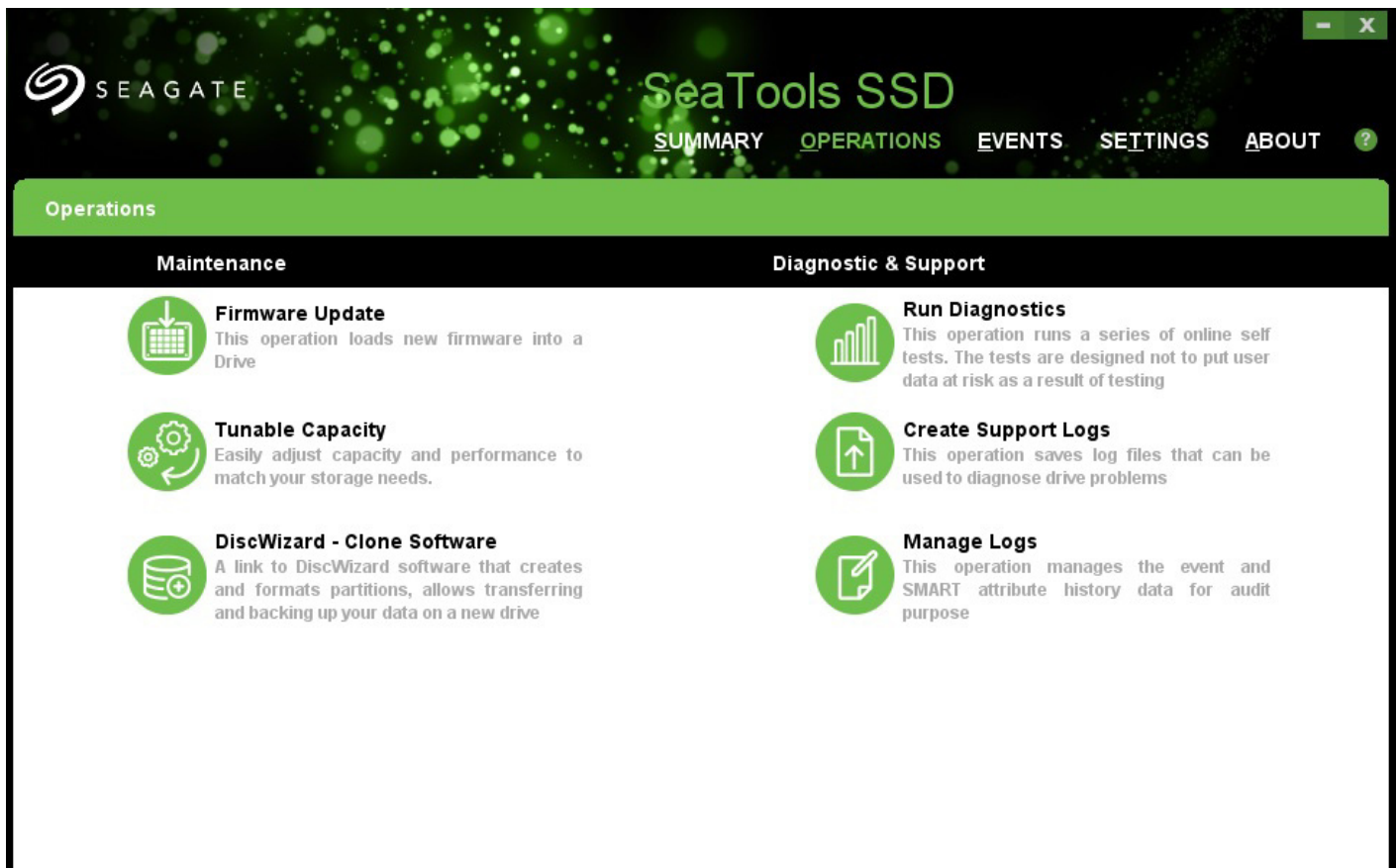
## 2.3 Operations Page

This section describes the Operations page in the SeaTools SSD GUI. The Operations page allows you to perform tasks such as update firmware, clone a drive, run diagnostics, and manage logs on a selected SSD.

**NOTE** Refer to the SeaTools SSD GUI's online help for complete instructions on using each operation. To access the help topics, press **F1** when you are in one of the top-level pages, or click the question mark icon at the top right of the page.

The following figure shows the SeaTools SSD GUI Operations page.

Figure 17 Operations Page



The following table describes the function of the major icons on the Operations page.

**Table 4 Operations**

Operation	Description
Firmware Update	Updates the firmware on the selected SSD with the latest version from the manufacturer. See <a href="#">Section 3.3 Update SSD Firmware</a> for more information.
DiscWizard - Clone software	Links to Seagate's DiscWizard cloning software Web page. DiscWizard allows you to create and format partitions, and transfer and back up data on a new drive. Your computer must be connected to the Internet to use this feature.
Run Diagnostics	Runs online diagnostics that test the health and condition of the selected SSD. See <a href="#">Section 3.2 Run Diagnostics</a> for more information.
Manage Logs	Exports the information in the SMART and Event logs or clears the logs. See <a href="#">Section 2.4.3 Events Log</a> for more information.
Set Tunable Capacity	Allows user to change between Performance Optimized and Capacity Optimized modes.  <b>NOTE</b> This feature is available only on select Seagate SSDs. If this feature is not available on your SSD, when you click on this feature, your drive will be grayed out.

## 2.4 Events Page

This section contains the following subsections:

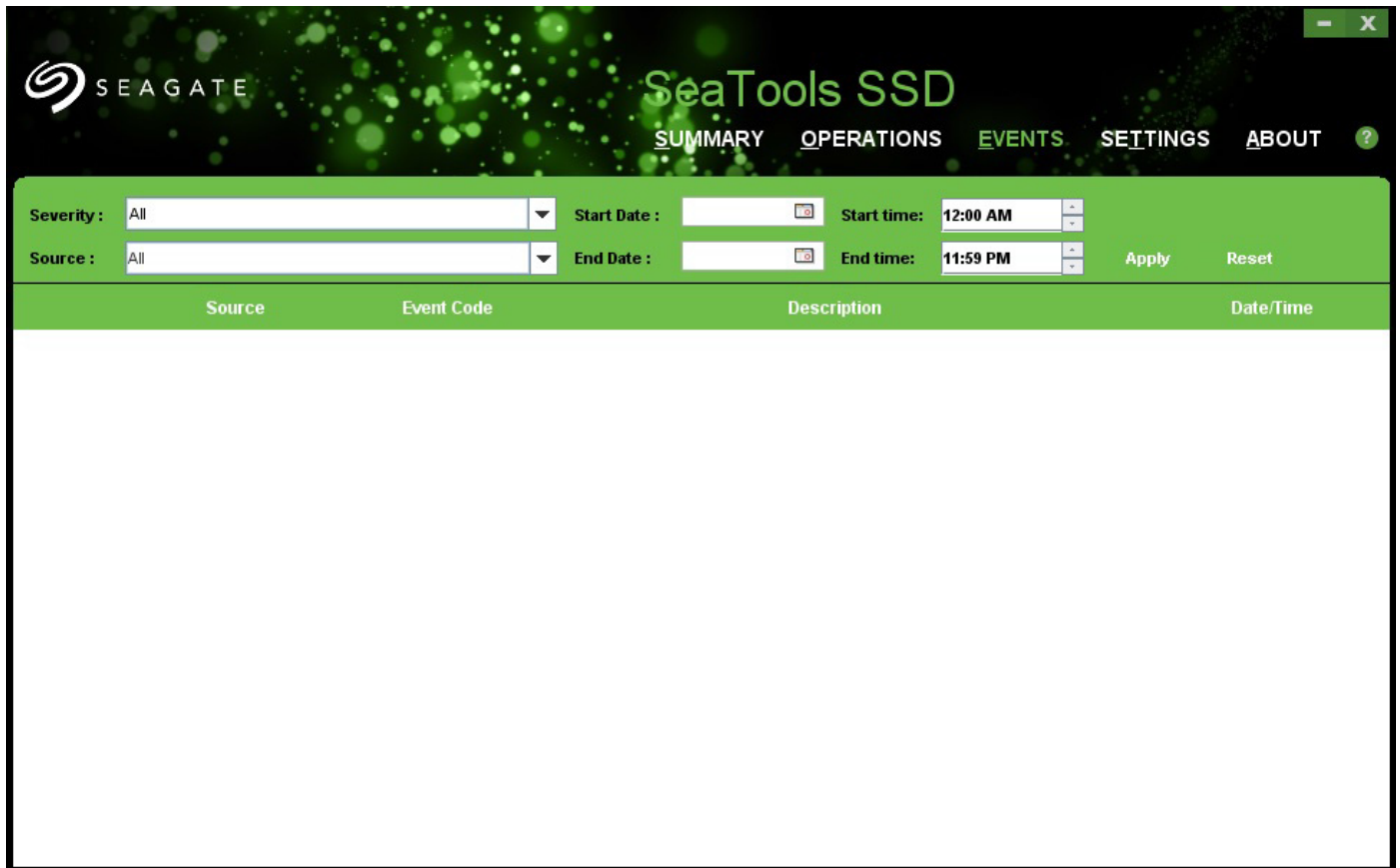
- [Overview](#)
- [Filters](#)
- [Events Log](#)
- [Event Details](#)

### 2.4.1 Overview

SeaTools SSD GUI logs an event every time it performs an action or recognizes a change in status. The Events page allows you to view a log of these events.

The following figure shows the SeaTools SSD GUI Events page.

Figure 18 Events Page



The upper portion of the Events page allows you to apply filters to the search results. The lower portion of the page displays a list of events generated by installed SSDs and the SeaTools SSD GUI. Each section is described in more detail in the following sections.

## 2.4.2 Filters

You can filter events by using the parameters outlined in the following table.

**Table 5 Event Filters**

Filter	Description
Severity	The classes of severity are defined as follows: <ul style="list-style-type: none"> <li>Information—For information purposes only. No action is necessary.</li> <li>Warning—Should be investigated and might lead to problems with the SSD.</li> <li>Critical—Action must be taken. Event can impact the functionality of the SSD or might indicate SSD failure.</li> </ul>
Source	The event source can be any one of the SSDs installed in the system, or it can be SeaTools SSD GUI itself.
Start date and time	Defines the start of the event filter time period.
End date and time	Defines the end of the event filter time period.

Click **Apply**, when you have chosen all the parameters by which you want to filter the results.

### 2.4.3 Events Log

The Events log portion of the screen provides a snapshot of SSD events. The list is arranged in reverse chronological order, with the most recent item on top.

The events summary displays the information in the following table for each event:

**Table 6 Event Log Details**

Filter	Description
Severity	The classes of severity are defined as follows: <ul style="list-style-type: none"><li>■ Information—For information purposes only. No action is necessary.</li><li>■ Warning—Should be investigated and might lead to problems with the SSD.</li><li>■ Critical—Action must be taken. Event can impact the functionality of the SSD or might indicate SSD failure.</li></ul>
Source	The event source can be any one of the SSDs installed in the system, or it can be SeaTools SSD GUI itself.
Event Code	The type of event, such as Security State or Operation.
Description	An abbreviated description of the event. To read a more complete description, double-click the event entry and view the event details in the area at the bottom of the page.
End date and time	The date and time that the event was generated.

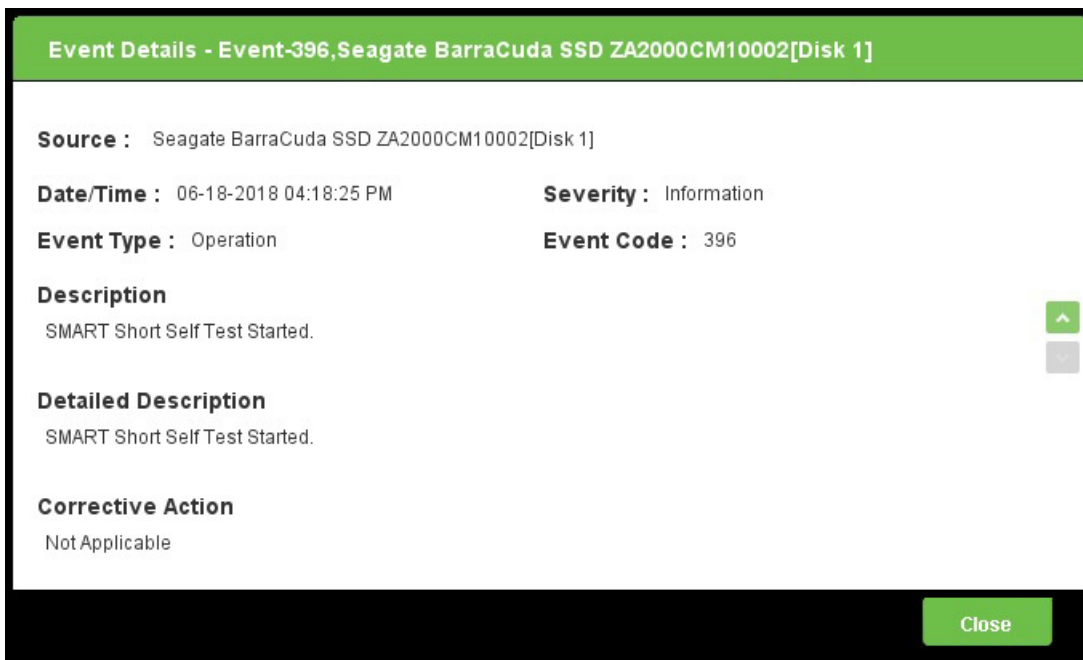
To learn more about any particular event, double-click the event and a details page appears (see [Section 2.4.4 Event Details](#)).



### 2.4.4 Event Details

Double-click anywhere on the event item to get more information about a particular event listed in the Events log page. An Event Details page opens.

Figure 19 Event Details



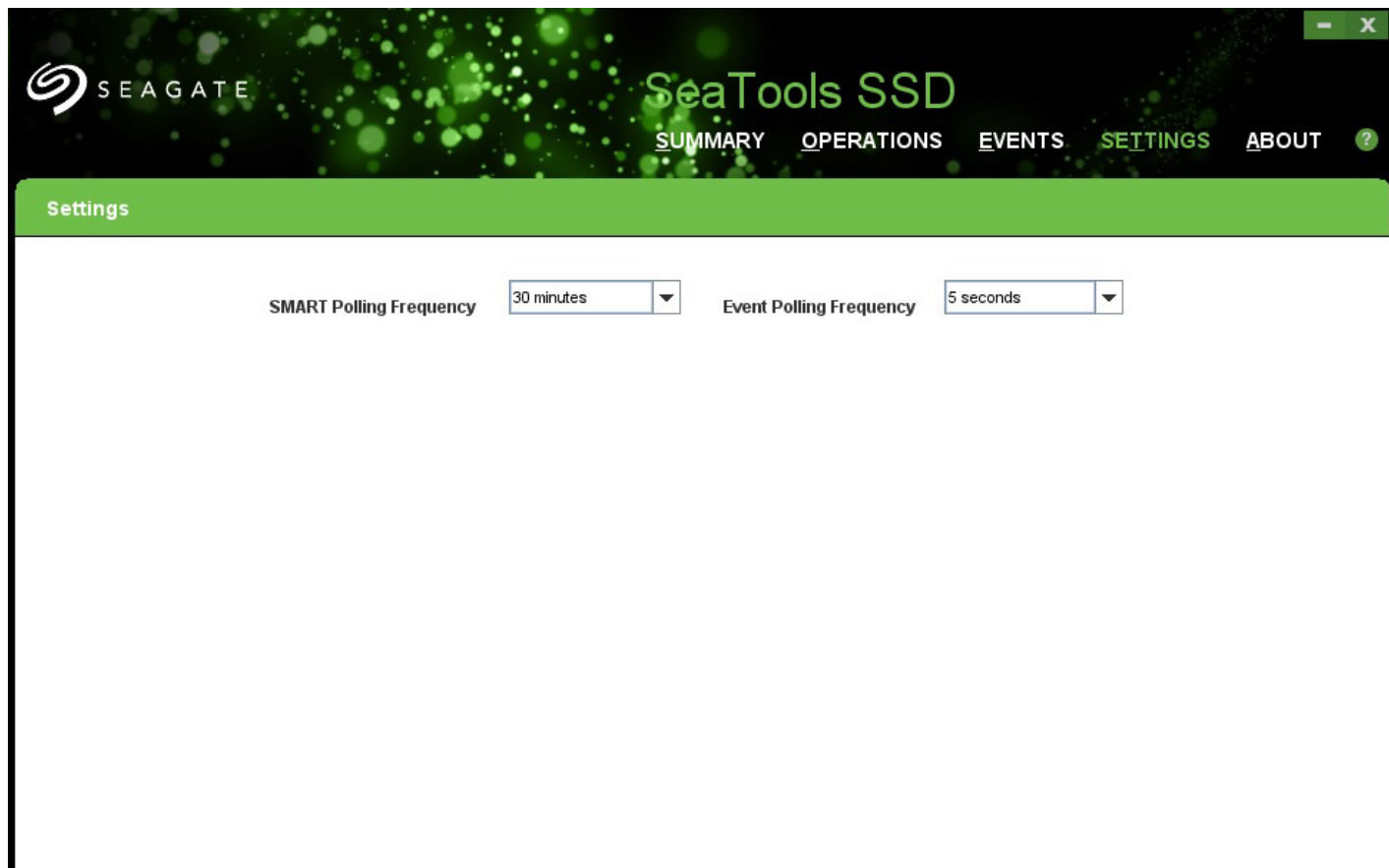
The Event Details page displays all of the same information as the Events log (see [Section 2.4.3 Events Log](#)), but also adds the following:

- Event type (as opposed to Event Code)
- A more detailed description of the event
- Advice for corrective action, if applicable.

## 2.5 Settings Page

The Settings page allows you to set the SMART polling and Event polling frequencies. The following figure shows the Settings page.

Figure 20 Settings Page

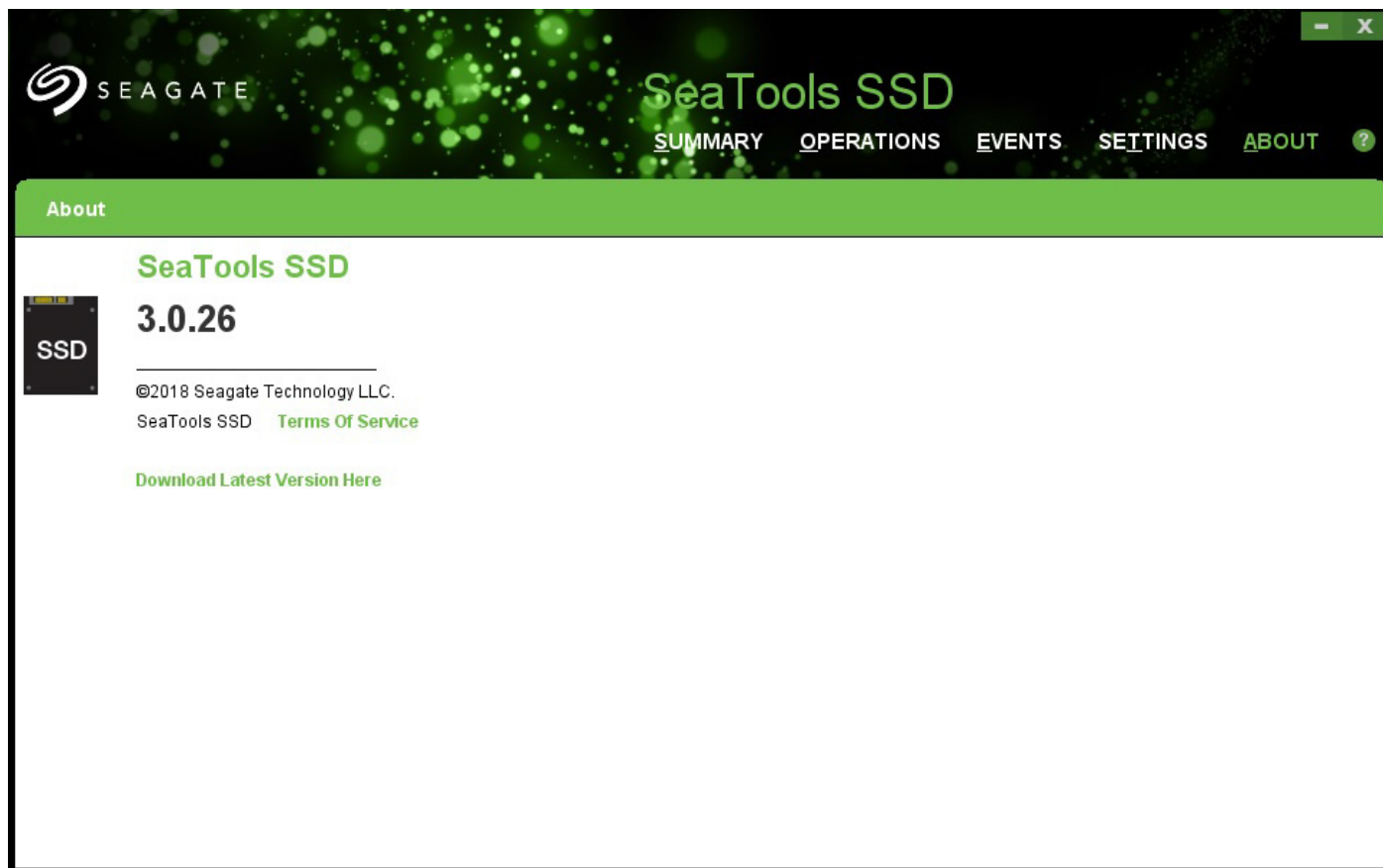


Choose the frequencies by using the pull-down menus.

## 2.6 About Page

The About page reports the ROM version of the selected SSD, as well as a link to the terms of service agreement. The following figure shows the About page.

Figure 21 About Page



## 3. Common Tasks

This chapter describes the most common tasks for monitoring SSD health, diagnosing problems and updating drivers and firmware. It contains the following sections:

- [Monitoring Health](#)
- [Run Diagnostics](#)
- [Update SSD Firmware](#)
- [Manage Logs](#)
- [Manage Advanced Power Management State](#)
- [Set Tunable Capacity](#)

### 3.1 Monitoring Health

This section presents common procedures to monitor the health of your SSD. It contains the following subsections:

- [Overview](#)
- [Monitor Overall Health](#)
- [Monitoring SMART Attributes](#)

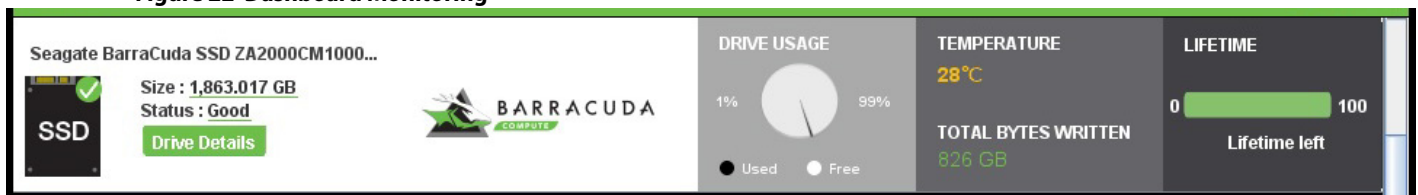
#### 3.1.1 Overview

The SeaTools SSD GUI provides dashboards as indispensable tools for determining the health of your SSDs (see [Section 2.2.2, Summary Dashboard](#)). You can view the dashboards themselves to monitor the overall health of selected SSDs or you can get more details looking into the SMART attributes found in the Drive Details tab (see [Section 2.2.2.2.2, Drives Panel](#)).

#### 3.1.2 Monitor Overall Health

The SeaTools SSD GUI dashboard allows you to make a quick visual assessment of the overall health of your installed drives. The following figure shows a dashboard and the major parts used for monitoring overall health.

**Figure 22 Dashboard Monitoring**



#### To check overall status of the selected drive

1. Go to the Summary page (see [Section 2.2, Summary Page](#)).
2. Refer to the dashboard of the SSD you want to check.
  - Look at the SSD Status icon in far left pane of the dashboard to determine the general status of the drive.
    - A green check mark on the drive's icon indicates the status of that drive is good.
    - A red X indicates a problem—check the Drive Details tab for further information about any problems.

- Refer to the Temperature pane to determine if the SSD is operating at an acceptable temperature. If the SSD temperature appears in red, then it indicates that the operating temperature is too high and you must check the SSD to ensure its air circulation is not blocked.
- Refer to the Lifetime left pane of the SSD to see how much time is left before the selected SSD reaches the end of its life span.

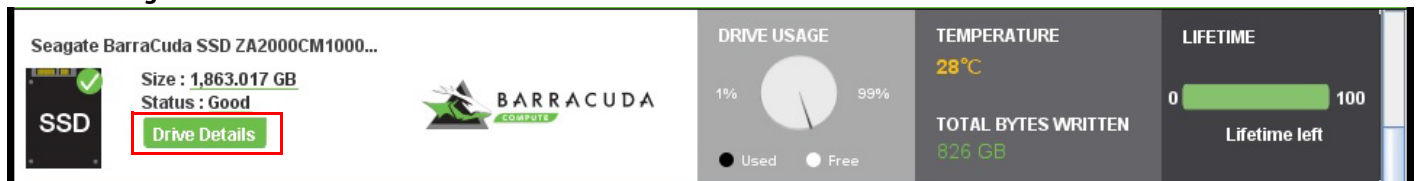
### 3.1.3 Monitoring SMART Attributes

SeaTools SSD GUI allows you to monitor SMART attributes (for more information, see [Section 2.2.2.4, SMART Tab](#)), for more detailed troubleshooting information.

#### To monitor SMART attributes for possible problems with a drive

1. Go to the Summary page→Dashboard of the selected SSD→Far left pane that includes general information about the SSD.
2. Click **Drive Details**, as shown in the figure below.

Figure 23 Drive Details



3. Go to the SMART tab.
4. Review the State indicator for each attribute.  
Each SMART attribute includes a State indicator, as shown in the figure below.

Figure 24 SMART Tab State Indicators

The screenshot shows the SeaTools SSD interface for a Seagate BarraCuda SSD ZA2000CM10002 (1,863.017 GB). The status is 'Good'. The SMART tab is selected, displaying a table of SMART attributes. All attributes are in the 'OK' state.

ID	Attributes	State	Normalized	Worst	Threshold	Raw
1	UECC Error count	OK	100	100	50	0
9	Power-On Hours (POH)	OK	100	100	0	230 Hrs
C	Device Power Cycle Count	OK	100	100	0	58
10	Spare Blocks Available	OK	100	100	0	169
11	Remaining Spare Blocks	OK	100	100	0	169
A8	Sata Phy Error Count	OK	100	100	0	0
AA	Bad Block Count	OK	100	100	10	1135
AD	Erase Count	OK	100	100	0	131075
AE	Unexpected Power loss Count	OK	100	100	0	15
B1	Wear Range Delta	OK	0	0	0	0%
C0	Unexpected Power loss Count	OK	100	100	0	15

- If all the values in the State column of the SMART attributes are OK, then your SSD is running normally and is not in danger of failing.
- If any state indicator displays in red, this indicates a problem, and you must back up your data immediately.

## 3.2 Run Diagnostics

This chapter contains the following sections:

- [Overview](#)
- [Short Self-Test](#)
- [Extended Self-Test](#)
- [Selective Self-Test](#)

### 3.2.1 Overview

The Operations page (see [Section 2.3, Operations Page](#),) allows you to run diagnostic self-tests on your system-installed SSDs. The following table shows the tests you can perform with SeaTools SSD GUI.

**Table 7 Types of Diagnostics Self-Tests**

Type	Description
Short	Performs a quick scan on randomly selected logical bus addresses (LBAs) on the selected drive. Does not test the flash media. It must be completed in 60 seconds or less.
Extended	Performs a thorough scan of all LBAs of the selected drive. Also performs limited testing of the flash media.
Selective	Allows you to determine the exact range of LBAs to scan. This test destroys the selected user data.

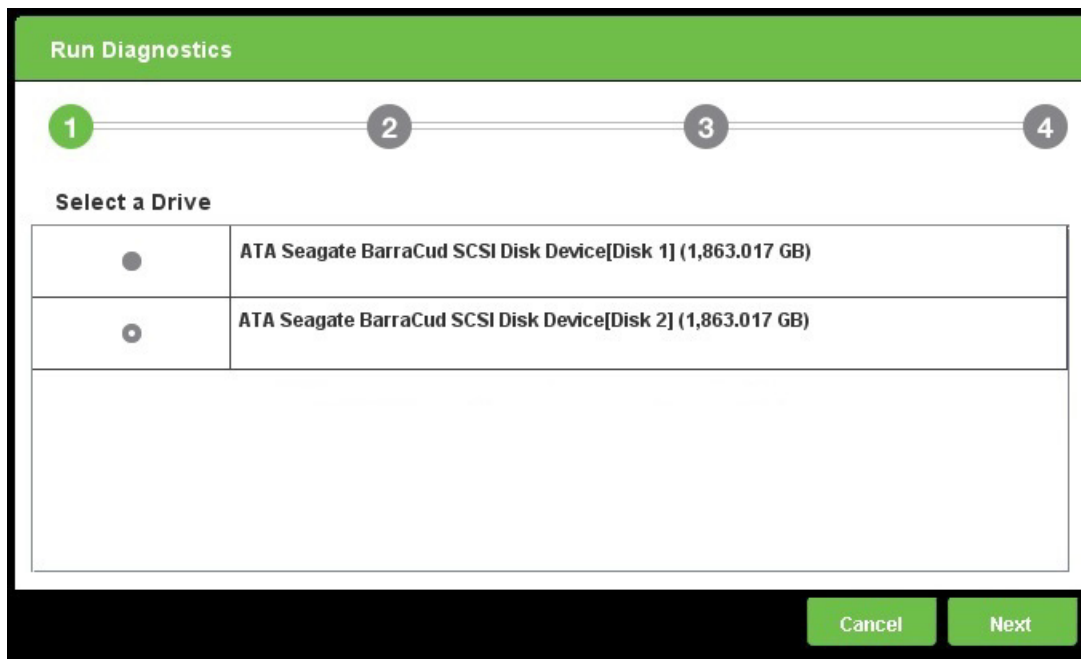
This section describes procedures for each.

### 3.2.2 Short Self-Test

#### To perform a short self-test

1. Go to the **Operations** page→**Run Diagnostics**.
2. Select a drive to test when the following page opens.

Figure 25 Diagnostic Self-Test Drive Selection

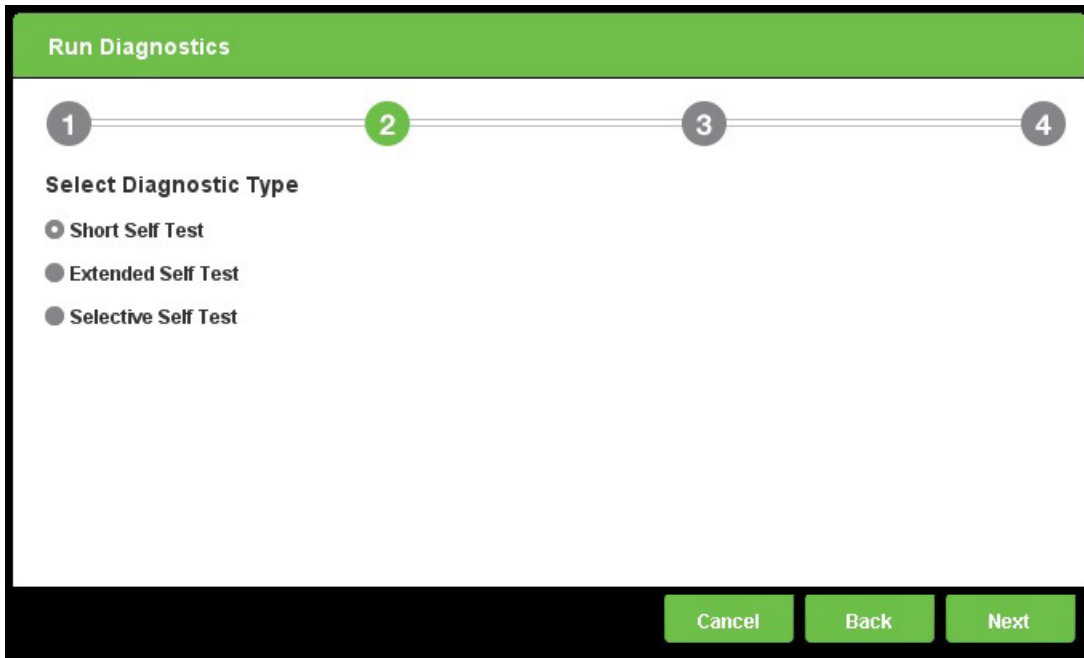


3. Click **Next**.



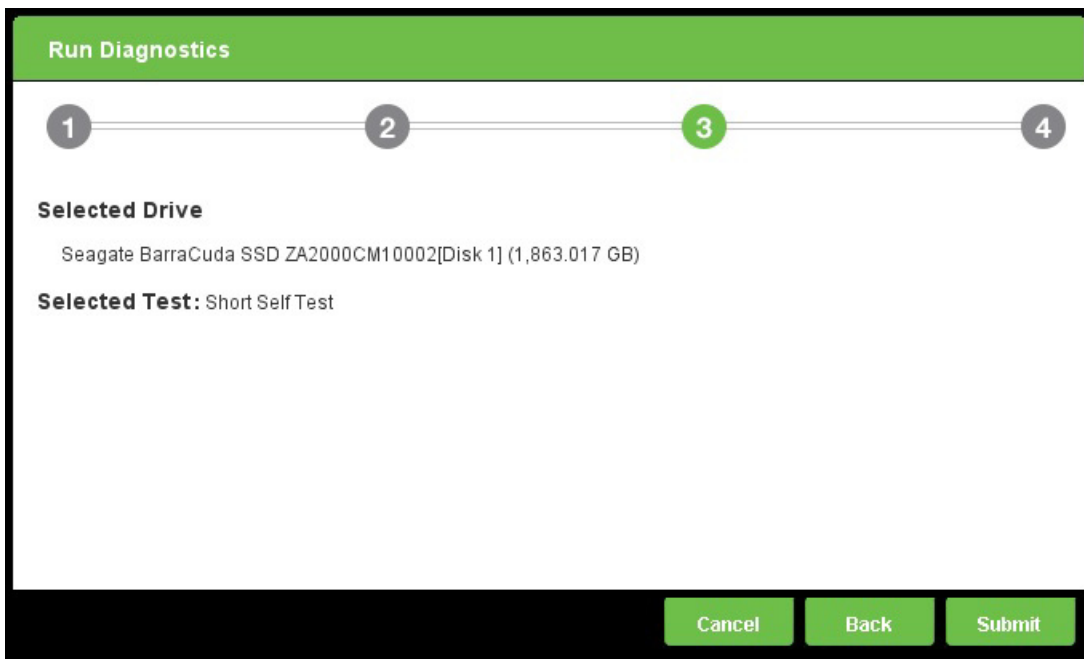
4. Choose **Short Self-Test** when the following page opens.

**Figure 26 Diagnostic Short-Self Test Selection**



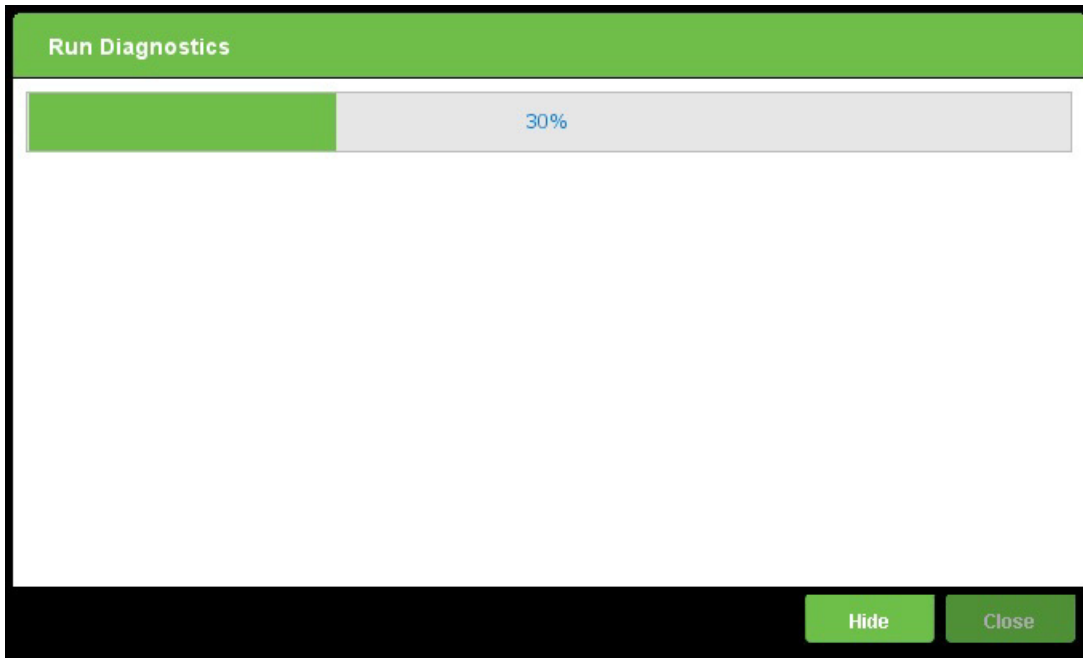
5. Click **Next**.
6. Click **Submit** to confirm your selection when the following page opens.

**Figure 27 Diagnostic Short Self-Test Confirmation**



The following page shows the progress of the operation.

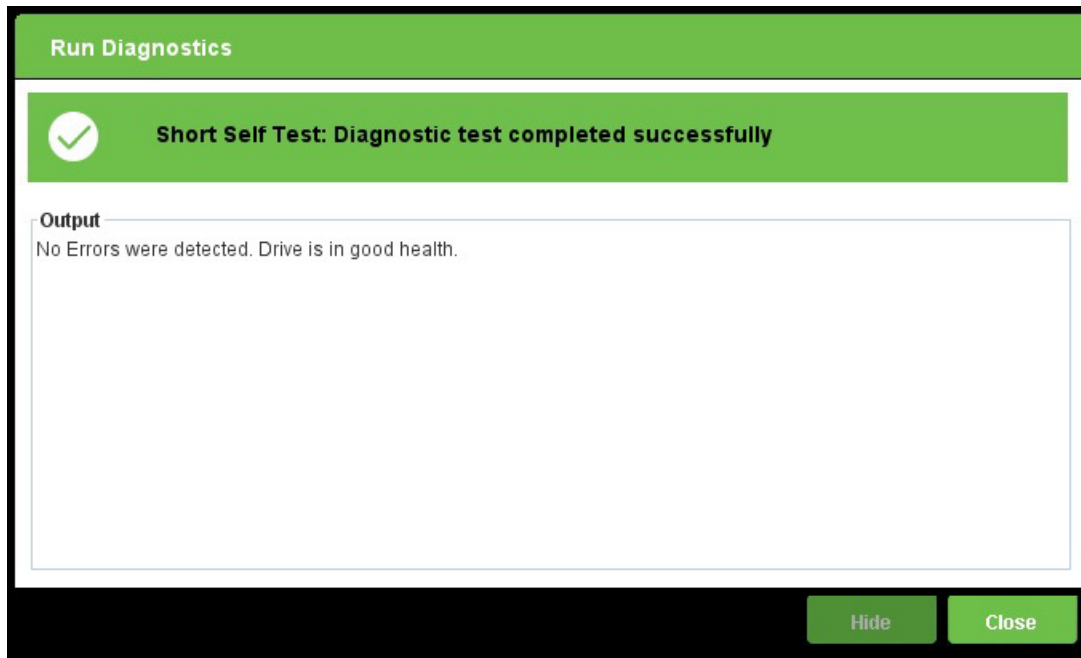
Figure 28 Diagnostic Self-Test Progress



**NOTE** Click **Hide** to minimize this page and have the operation run in the background. You can check the progress of an operation in progress by referring to the Operations Status tab in the Summary page (see [Section 2.3, Operations Page](#), for more information.)

7. Click **Close** when the following page opens, confirming that the Short Self-Test Diagnostic test is complete.

**Figure 29 Diagnostic Short Self-Test Complete**

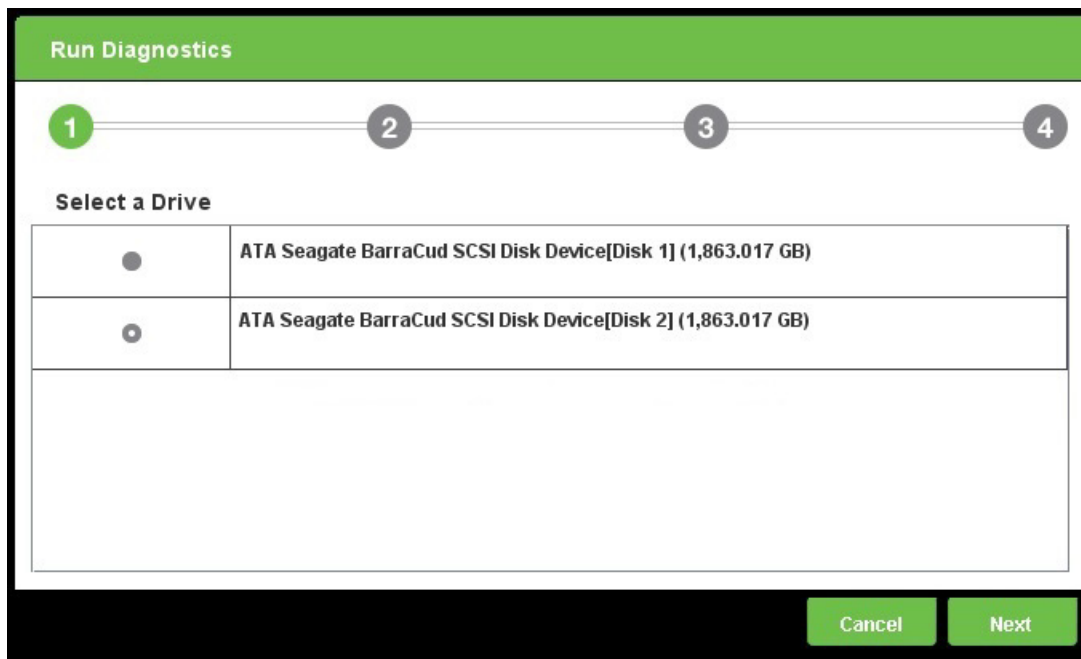


### 3.2.3 Extended Self-Test

#### To perform an extended self-test

1. Go to the Operations page→Run Diagnostics.
2. Select the drive on which you want to run the test when the following page appears.

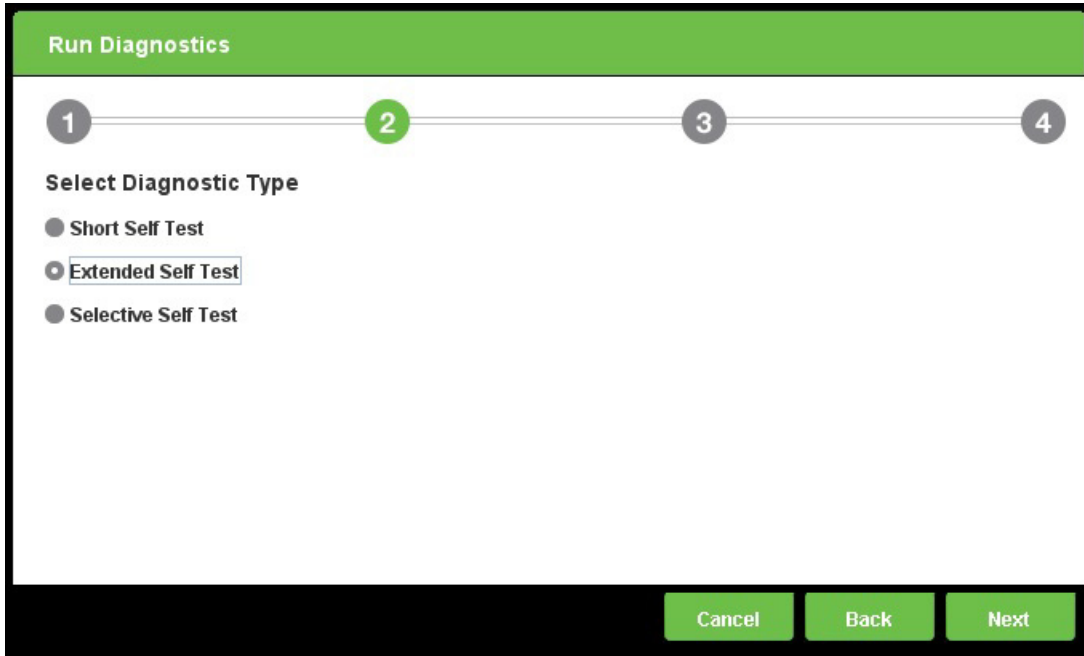
Figure 30 Diagnostic Self-Test Drive Selection



3. Click **Next**.

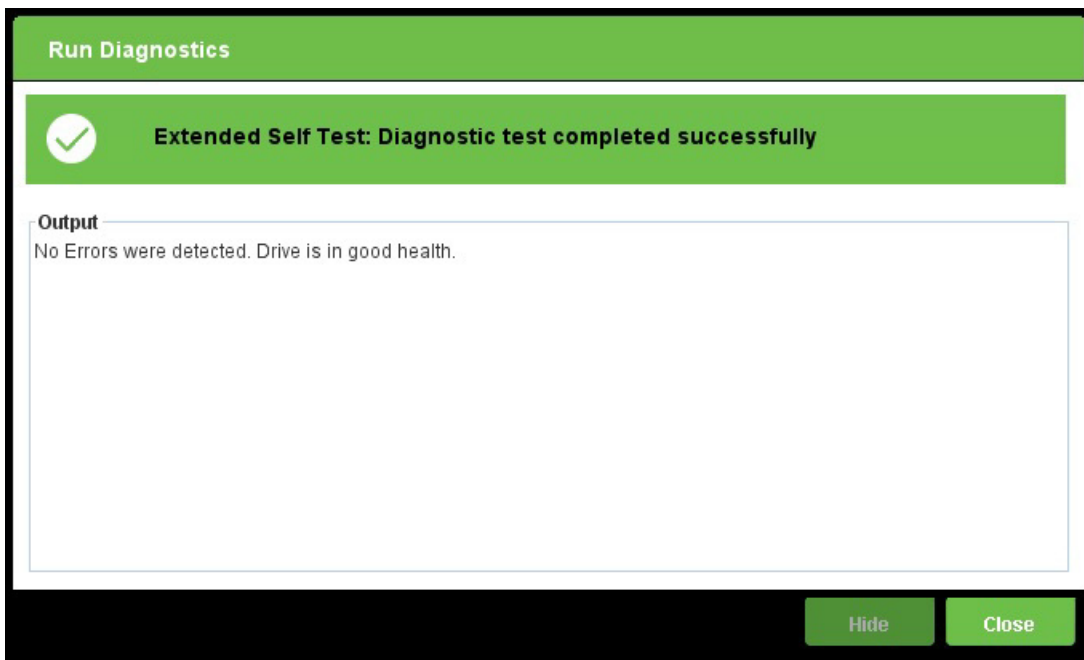
4. Choose **Extended Self-Test** when the following page appears.

Figure 31 Diagnostic Extended Self-Test Selection



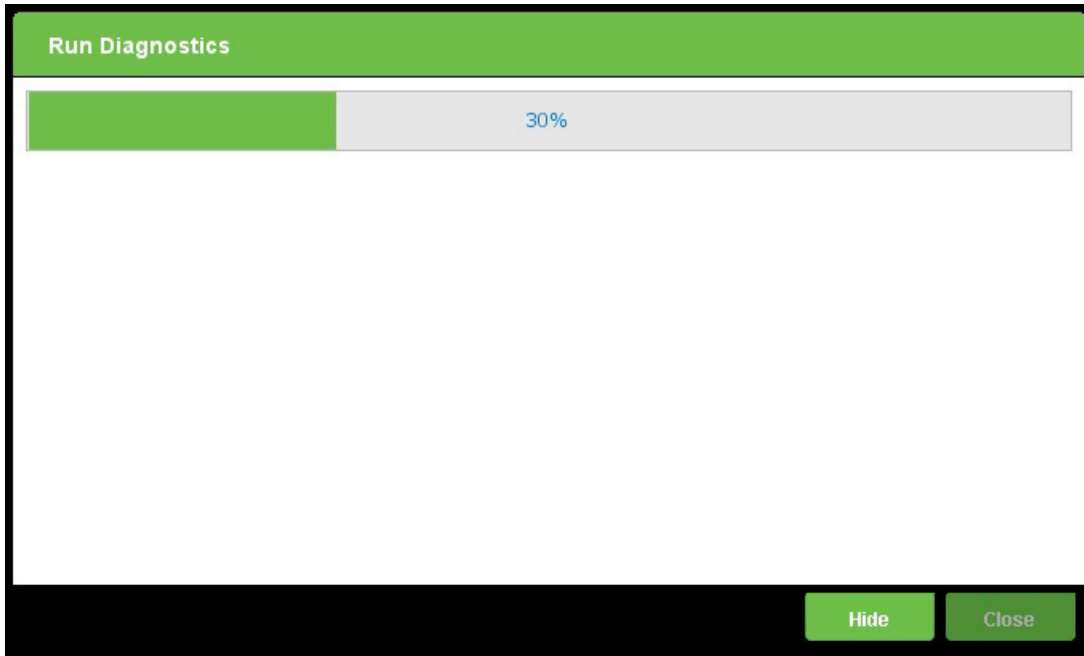
5. Click **Next**.
6. Click **Submit** to confirm your selection when a page similar to the following one appears.

Figure 32 Diagnostic Extended Self-Test Confirmation



The following page appears to show the progress of the operation.

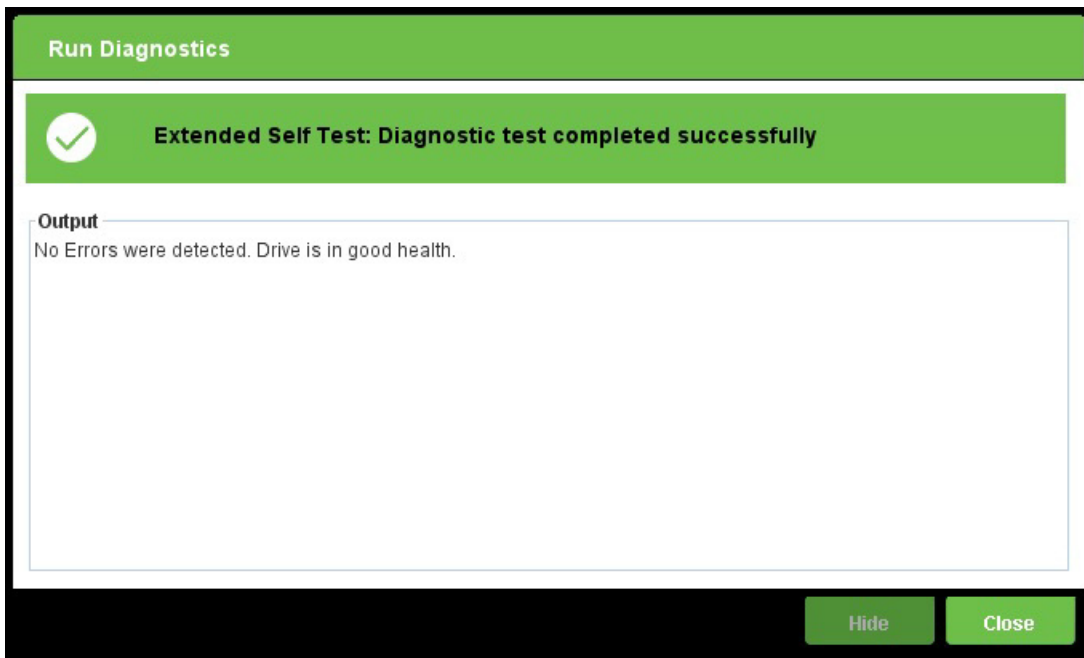
Figure 33 Diagnostic Self-Test Progress



**NOTE** The Diagnostic Extended Self-Test may take several minutes to complete. Click **Hide** to minimize this page and have the operation run in the background. You can always check the progress of an operation in progress by referring to the Operations Status tab in the Summary page (see [Section 2.3, Operations Page](#), for more information.)

7. Click **Close** when the following page appears, confirming that the Diagnostic Extended Self-Test test is complete.

Figure 34 Diagnostic Extended Self-Test Complete



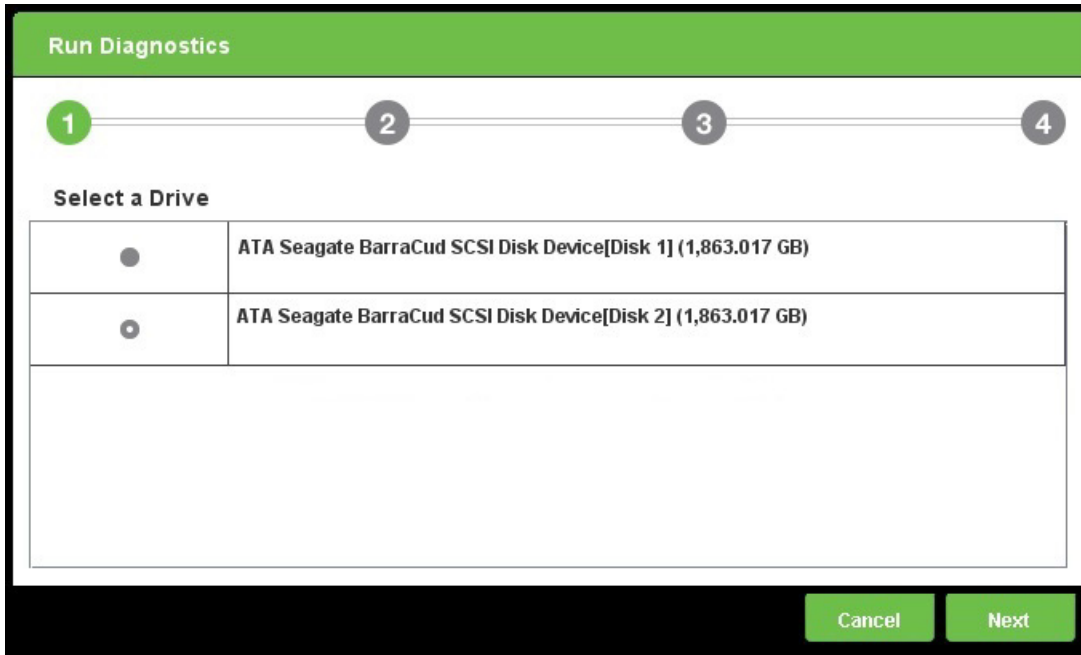
### 3.2.4 Selective Self-Test

Run the Diagnostics Selective Self-Test when you want to test a known section of your drive. This test allows you to specify a range of LBAs to examine.

#### To perform a Diagnostics Selective Self-Test

1. Go to the Operations page→Run Diagnostics.
2. Select the drive on which you want to run the test when a page similar to the following one appears.

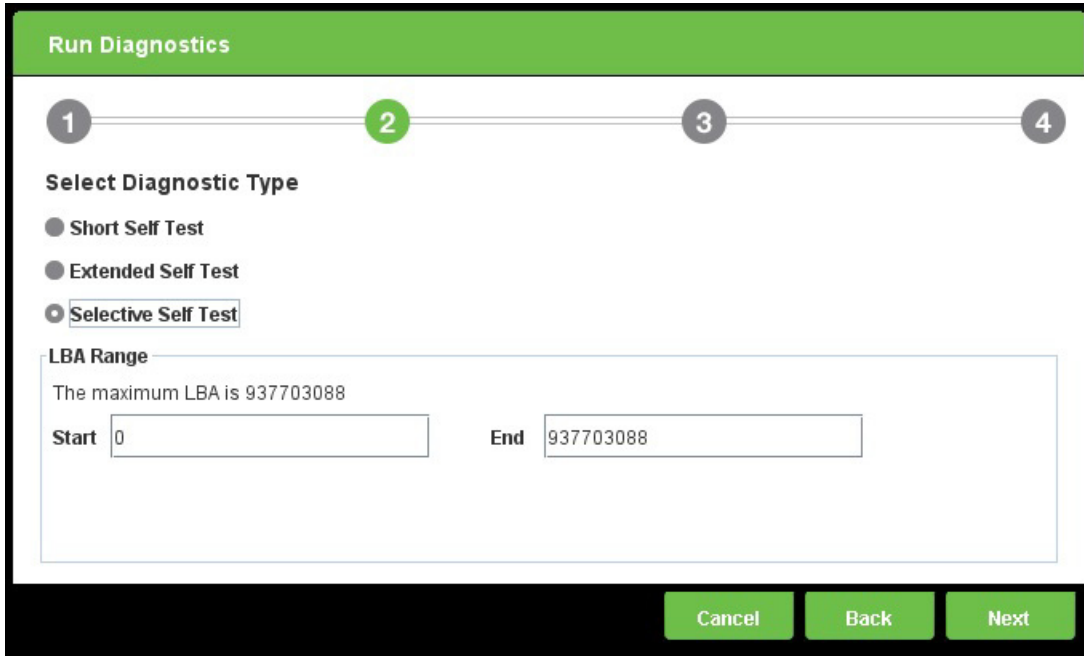
Figure 35 Diagnostic Self-Test Drive Selection



3. Click **Next**.

4. Choose **Selective Self-Test** when the following page appears.

**Figure 36 Diagnostic Selective Self-Test Selection**

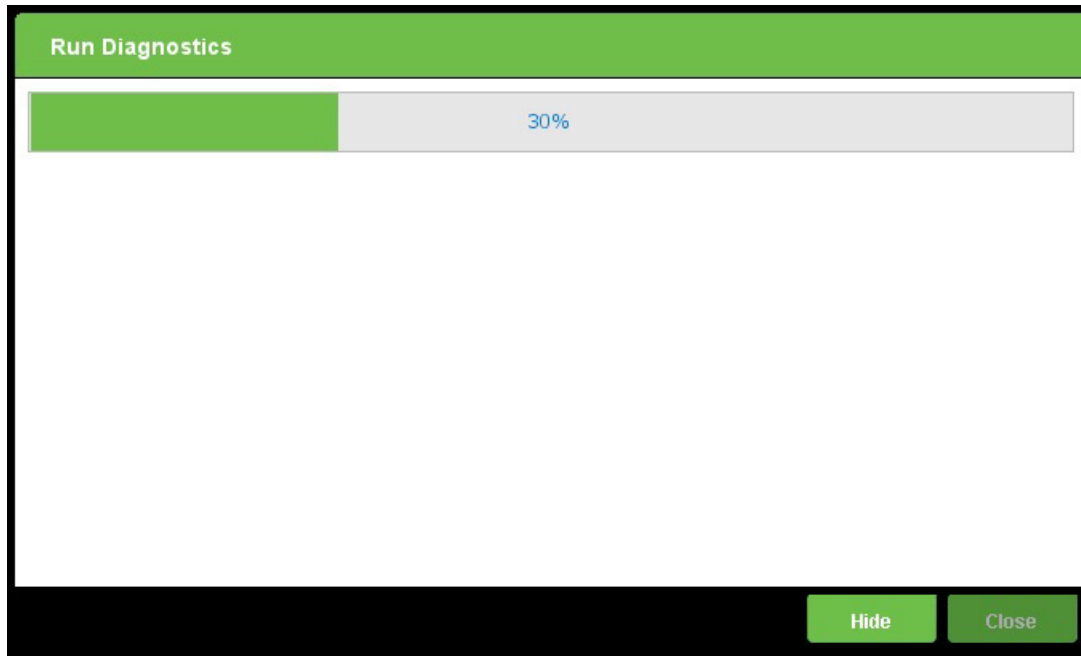


5. Click **Next**.



The following page appears to show the progress of the operation.

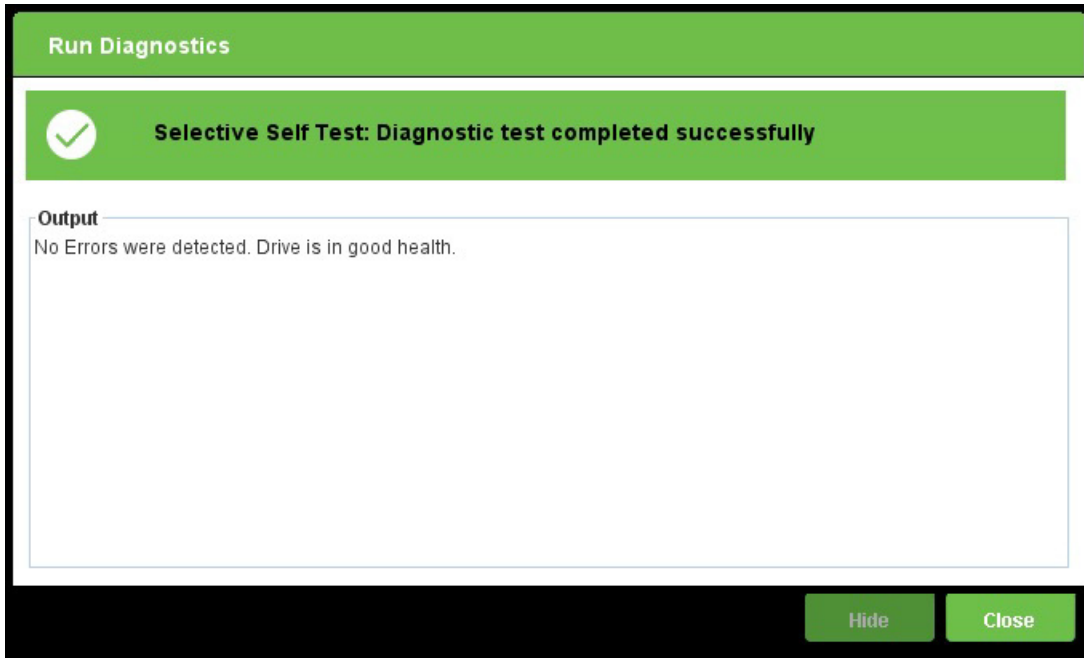
Figure 37 Diagnostic Test Progress



**NOTE** The Selective Self-Test may take several minutes to complete. Click **Hide** to minimize this page and have the operation run in the background. You can always check the progress of an operation in progress by referring to the Operations Status tab in the Summary page (see [Section 2.3, Operations Page](#), for more information.)

6. Click **Close** when the following page appears, confirming that the Diagnostic Selective Self-Test is complete.

**Figure 38 Selective Self-Test Diagnostic Test Complete**



### 3.3 Update SSD Firmware

This section describes how to update the firmware of an installed SSD.

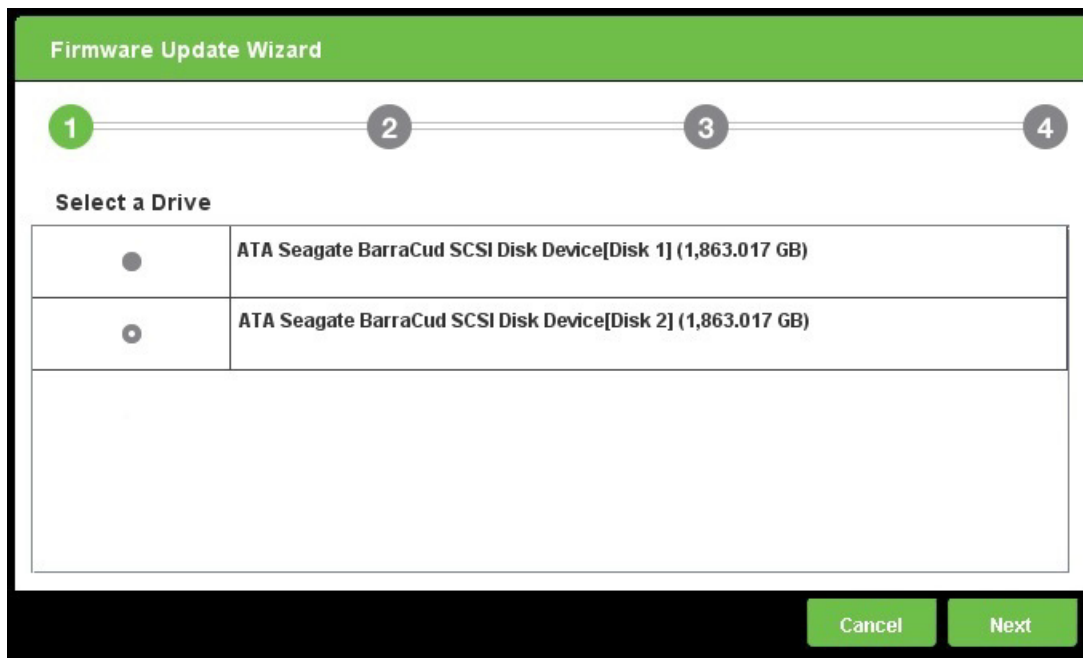
Before you begin, check if your drive needs a firmware update.

To determine if you need to update your firmware, look up the latest firmware release for your drive, then look up the currently installed firmware version of your selected drive. See the Asset portion of the Summary page (see [Section 2.2, Summary Page](#), for more information.)

#### To update your SSD firmware:

1. Download the required version of the drive's firmware file and save it to a drive other than the one you want to update.
2. Go to the Operations page→Firmware Update  
See [Section 2.3, Operations Page](#), for more information.
3. Select the SSD to update when the following page opens.

**Figure 39 Firmware Update, Select a Drive**

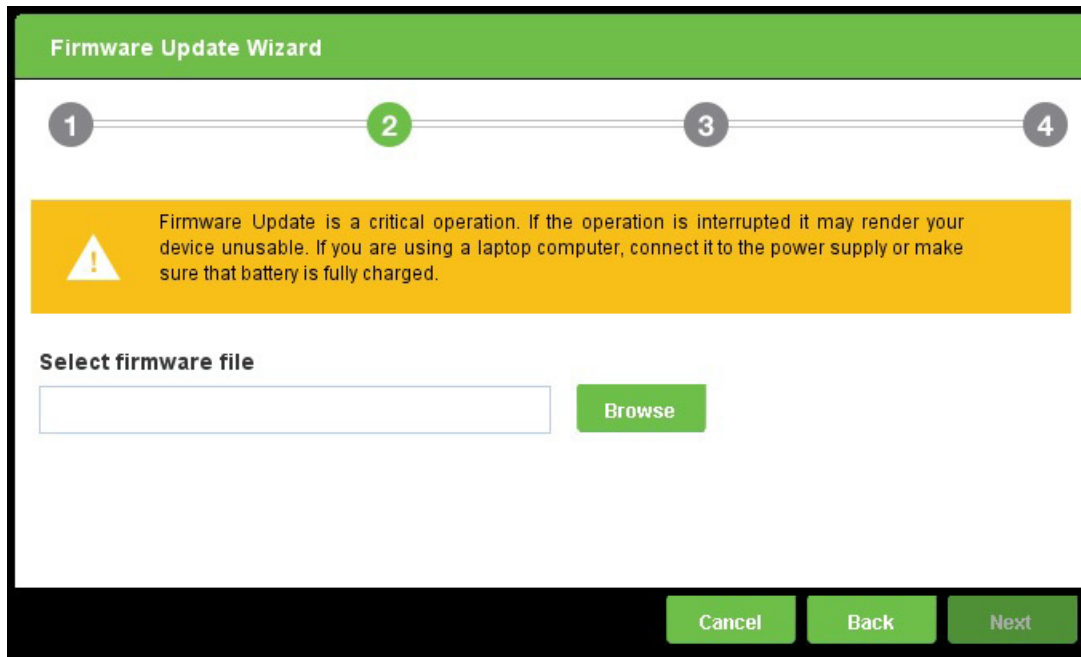


4. Click **Next**.

5. Note the warning when the following page opens, and click **Browse** to select the correct firmware file for your drive.

**NOTE** Back up your data before updating your firmware.

**Figure 40 Firmware Update Select Firmware File**

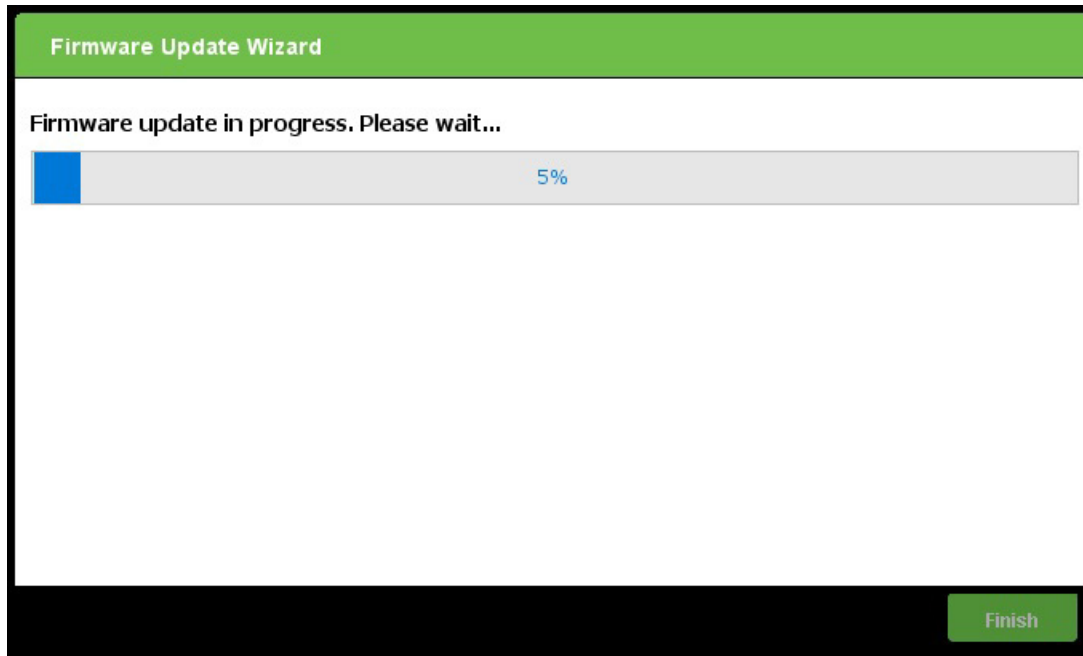


The wizard confirms that the firmware file is compatible with the selected drive.

6. Click **Next**.

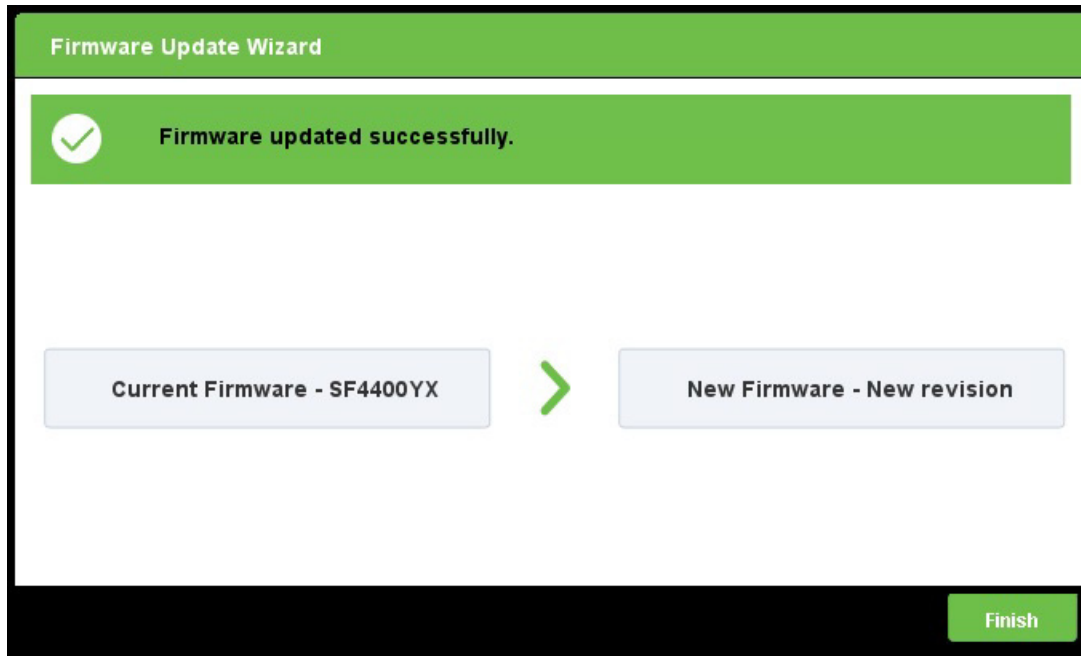
The following page appears to show the progress of the operation.

**Figure 41 Firmware Update in Progress**



7. Click **Finish** when the following page appears, confirming that the Firmware Update is complete.

Figure 42 Firmware Update Complete



## 3.4 Manage Logs

This section describes how to export Events logs and the SMART logs and how to clear the logs when you no longer need the information. It contains the following subsections:

- [Export Logs](#)
- [Clear Logs](#)

### 3.4.1 Export Logs

This section contains the following subsections:

- [Overview](#)
- [Export SMART Logs from Summary Page](#)

#### 3.4.1.1 Overview

This section describes how to export SMART and Event logs from SeaTools SSD GUI. You can export SMART logs from the Summary page or the Operations page. Both methods produce the same results: CSV (comma-separated value) files, or simple text-based files that store data in tables. The procedure below use the Summary page.

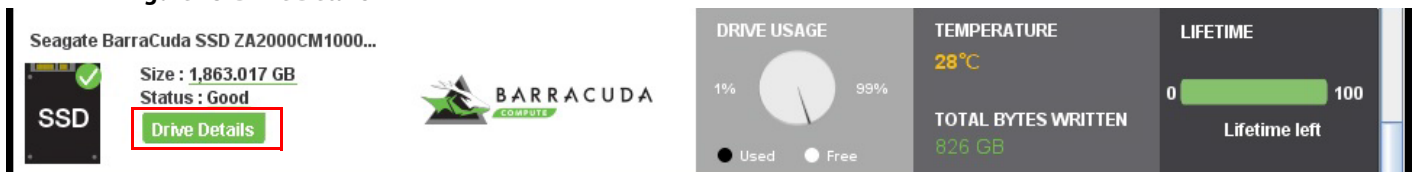
#### 3.4.1.2 Export SMART Logs from Summary Page

You can export SMART logs from the Summary page by clicking on the dashboard of a selected drive, and then navigating to the SMART tab through the Drive Details button.

##### To export SMART logs from the Summary page

1. Go to the Summary page→Dashboard for the selected SSD→Far left pane that includes general information about the SSD.
2. Click **Drive Details**, as shown in the figure below.

**Figure 43 Drive Details**



**Figure 44 Go to the SMART tab** (see [Section 2.2.2.2.4, SMART Tab](#), for more information).

- 3. Click **Export SMART**, as shown in the figure below.

Figure 45 Export Log from Summary Pages

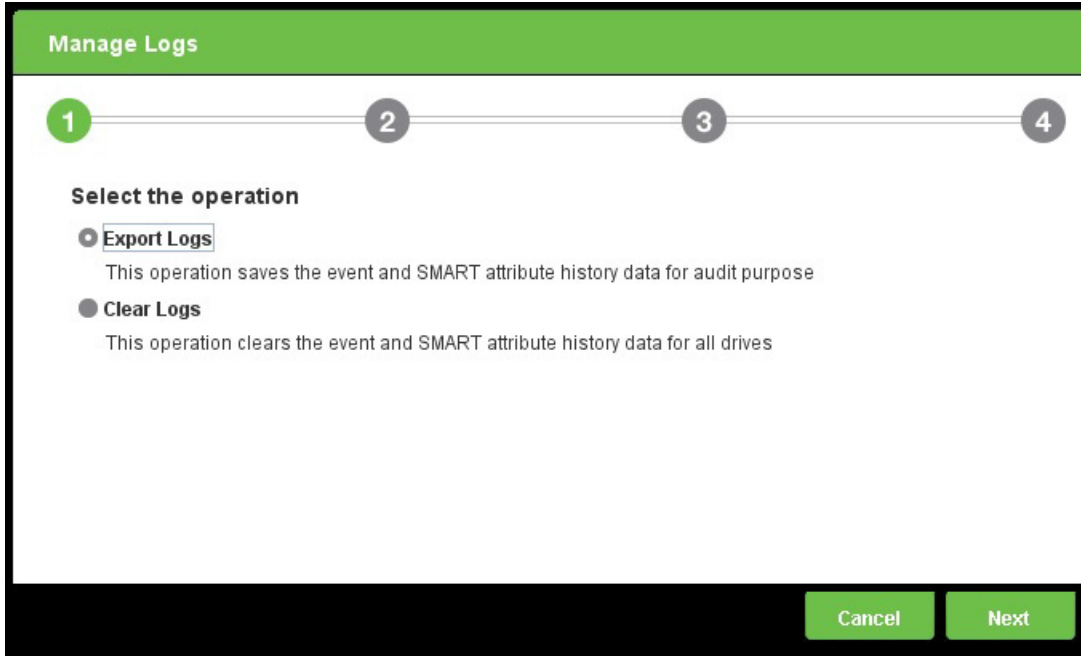
The screenshot shows the SeaTools SSD interface. At the top, the Seagate logo and 'SeaTools SSD' title are visible. Below the title, there are navigation tabs: SUMMARY, OPERATIONS, EVENTS, SETTINGS, and ABOUT. The main content area is titled 'Drives' and shows a 'Seagate BarraCuda SSD ZA2000CM10002[Disk 1] (1,863.017 GB)' with a status of 'Good'. There are 'Refresh' and 'Export SMART' buttons. The 'Export SMART' button is highlighted with a red box. Below this, there are tabs for 'Details', 'Interface', 'SMART', 'Power', and 'Security'. The 'SMART' tab is selected, displaying a table of SMART attributes.

ID	Attributes	State	Normalized	Worst	Threshold	Raw
1	UECC Error count	OK	100	100	50	0
9	Power-On Hours (POH)	OK	100	100	0	180 Hrs
C	Device Power Cycle Count	OK	100	100	0	45
10	Spare Blocks Available	OK	100	100	0	169
11	Remaining Spare Blocks	OK	100	100	0	169
A8	Sata Phy Error Count	OK	100	100	0	0
AA	Bad Block Count	OK	100	100	10	1135
AD	Erase Count	OK	100	100	0	65538
AE	Unexpected Power loss Count	OK	100	100	0	15
B1	Wear Range Delta	OK	0	0	0	0%
C0	Unexpected Power loss Count	OK	100	100	0	15



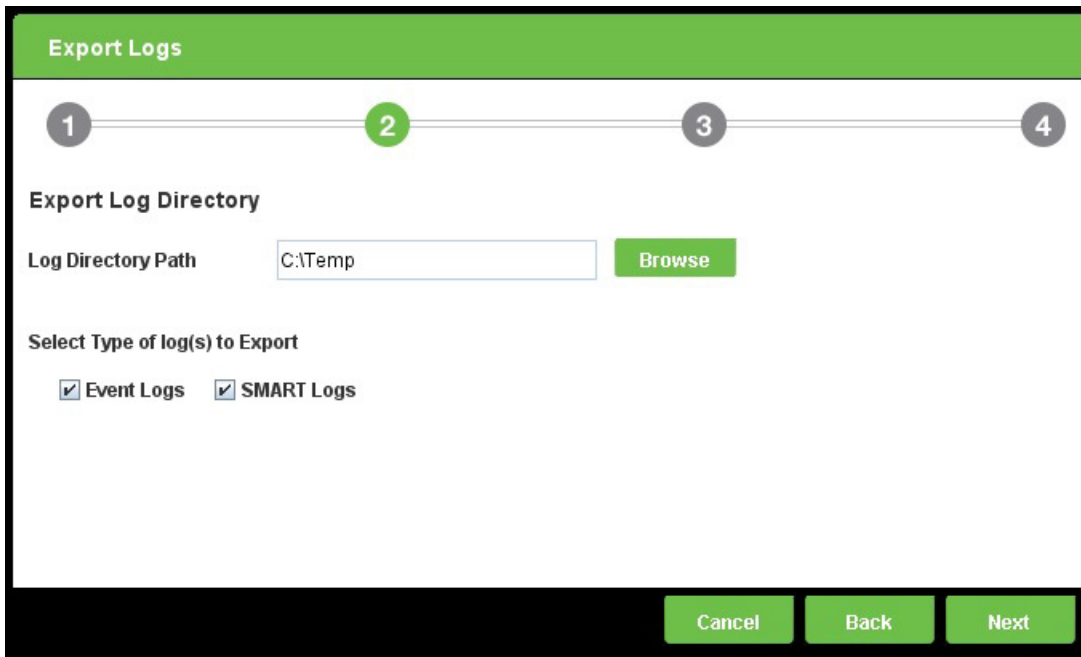
- When the following page opens, select Export Logs.

Figure 46 Manage Logs--Export



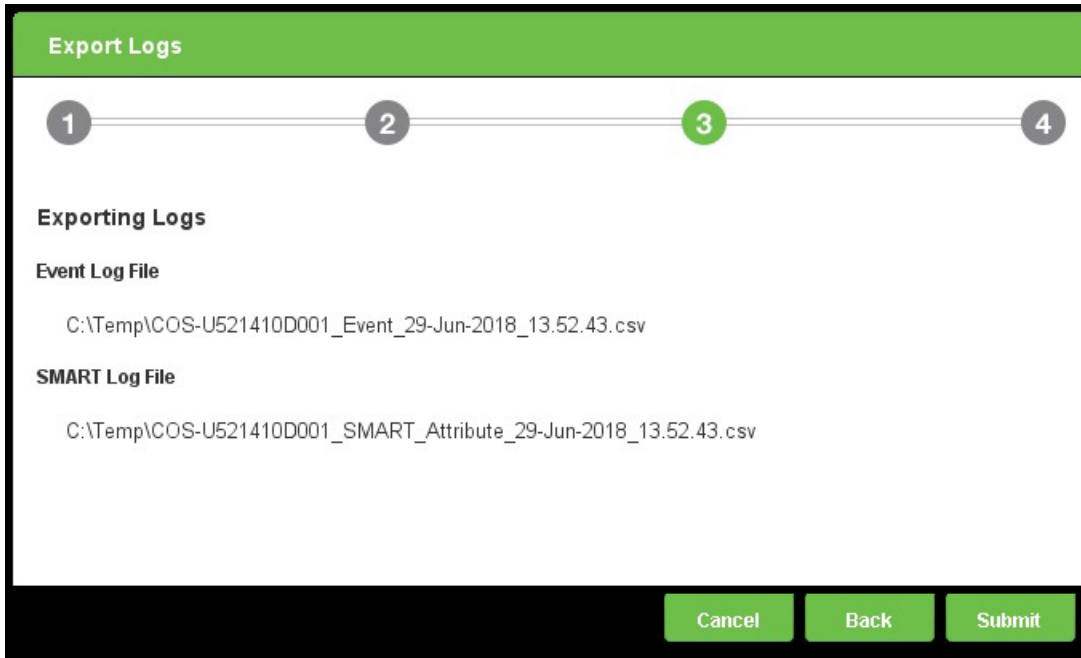
- When the following page opens, enter the path where you want to save your logs and the type of logs you want to save, and click **Next**.

Figure 47 Export Logs Path and Type



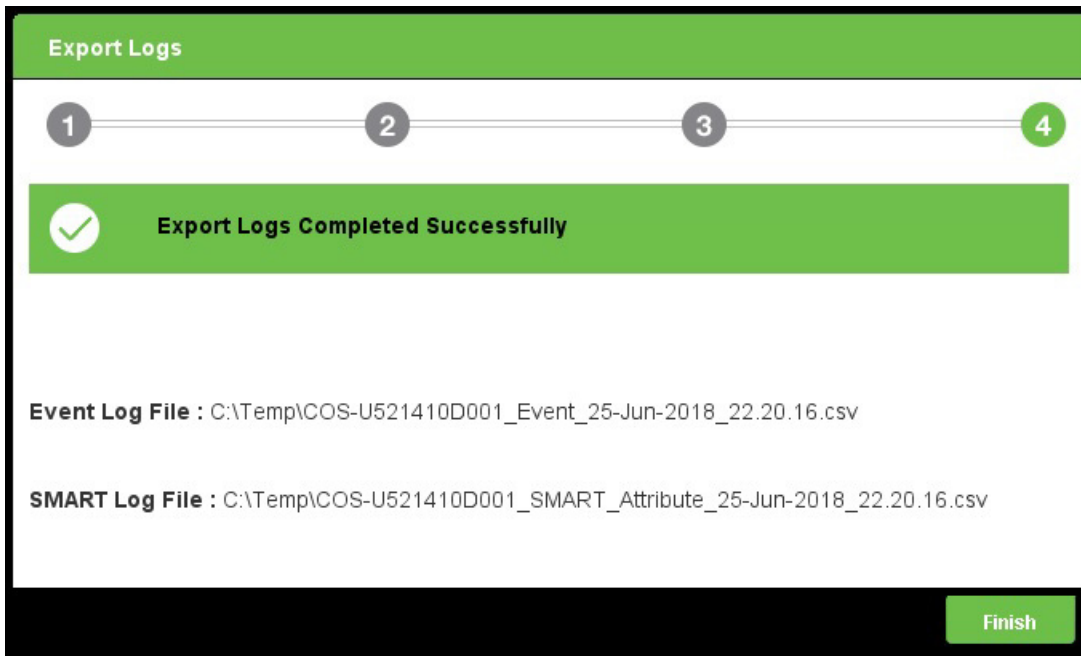
- When the following page opens, click **Submit** to confirm your command.

Figure 48 Export Logs Operation Confirmation



- 7. Click **Finish** when the following page opens to indicate that the operation is complete.

Figure 49 Export Logs Operation Complete



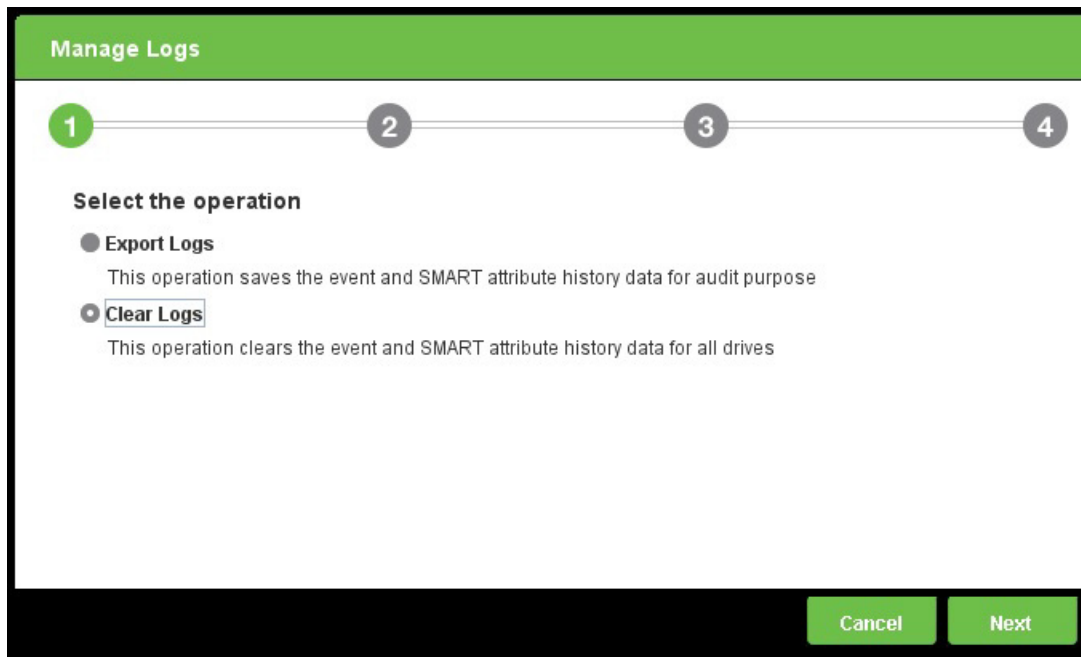
### 3.4.2 Clear Logs

When you no longer need log data, you can clear your data in the SMART logs and Event logs. SMART logs contain SMART attributes data. Event logs contain information about any event that SeaTools SSD tracks.

#### To clear SMART and Event logs from the Operations page

1. Go to the Operations page→Manage Logs.
2. When the following page opens, select Clear logs and click **Next**.

Figure 50 Clear Logs Operation Selection



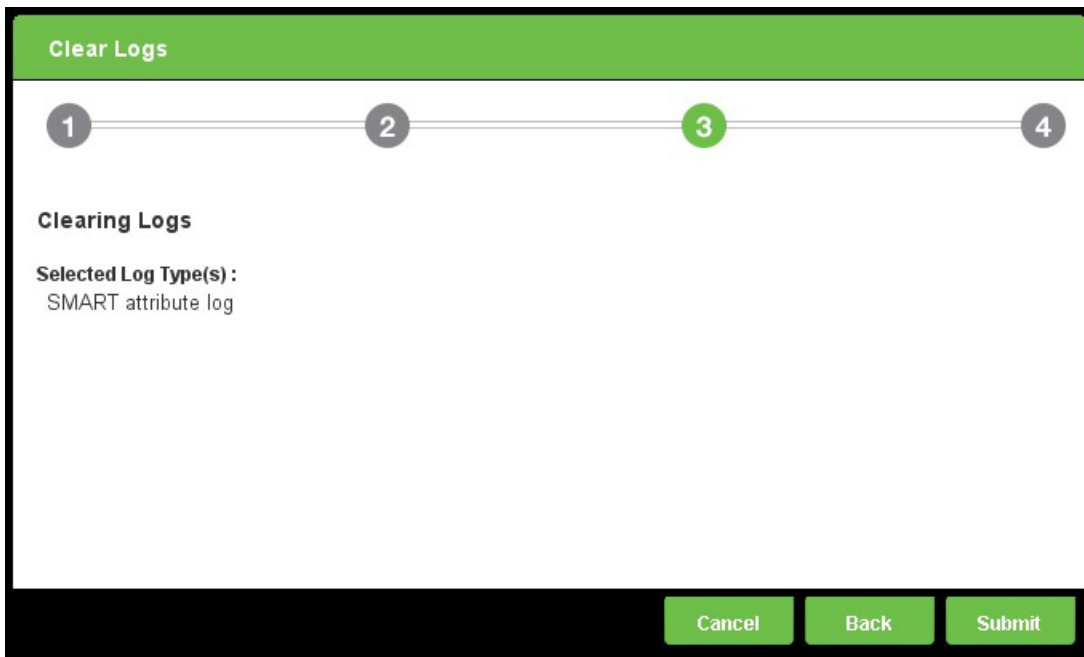
- When the following page opens, select the logs you want to clear and click Next.

Figure 51 Clear Logs Log Type



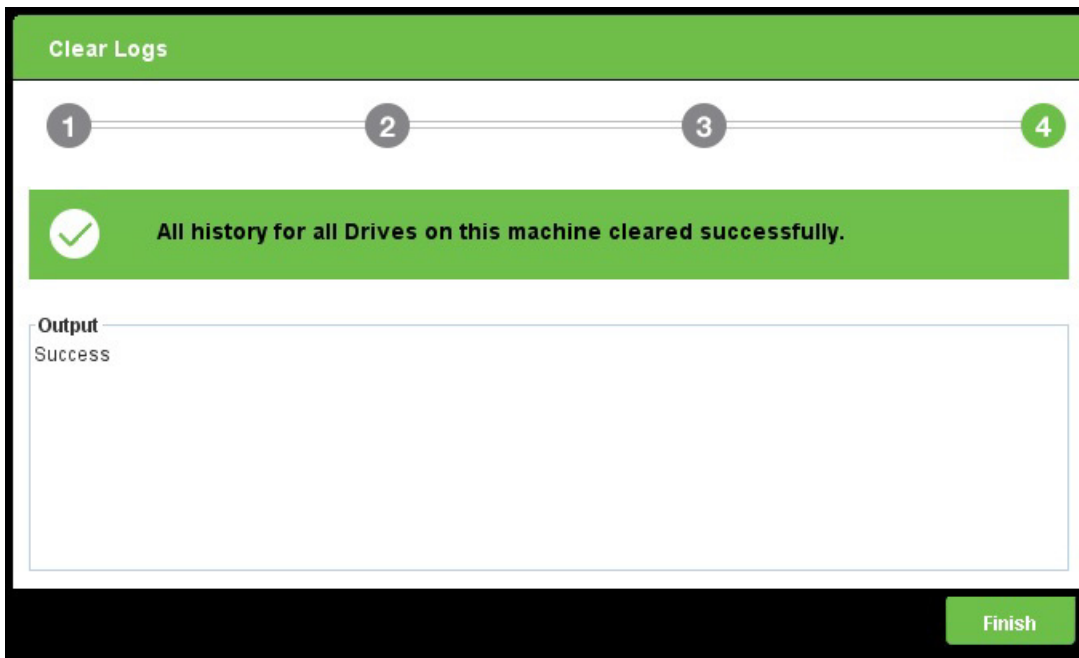
- When the following page opens, click **Submit** to confirm your choices.

Figure 52 Clear Logs Confirmation



5. Click **Finish** when the following page opens to indicate that the operation is complete.

**Figure 53 Clear Logs Operation Complete**



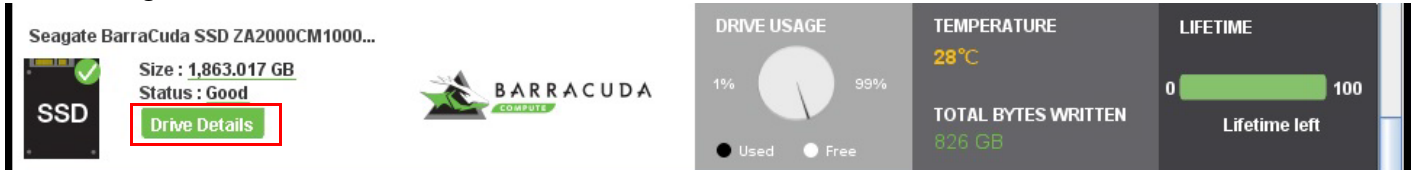
### 3.5 Manage Advanced Power Management State

SeaTools SSD GUI lets you change the advanced power management (APM) state of selected drives.

#### To set or change the APM state

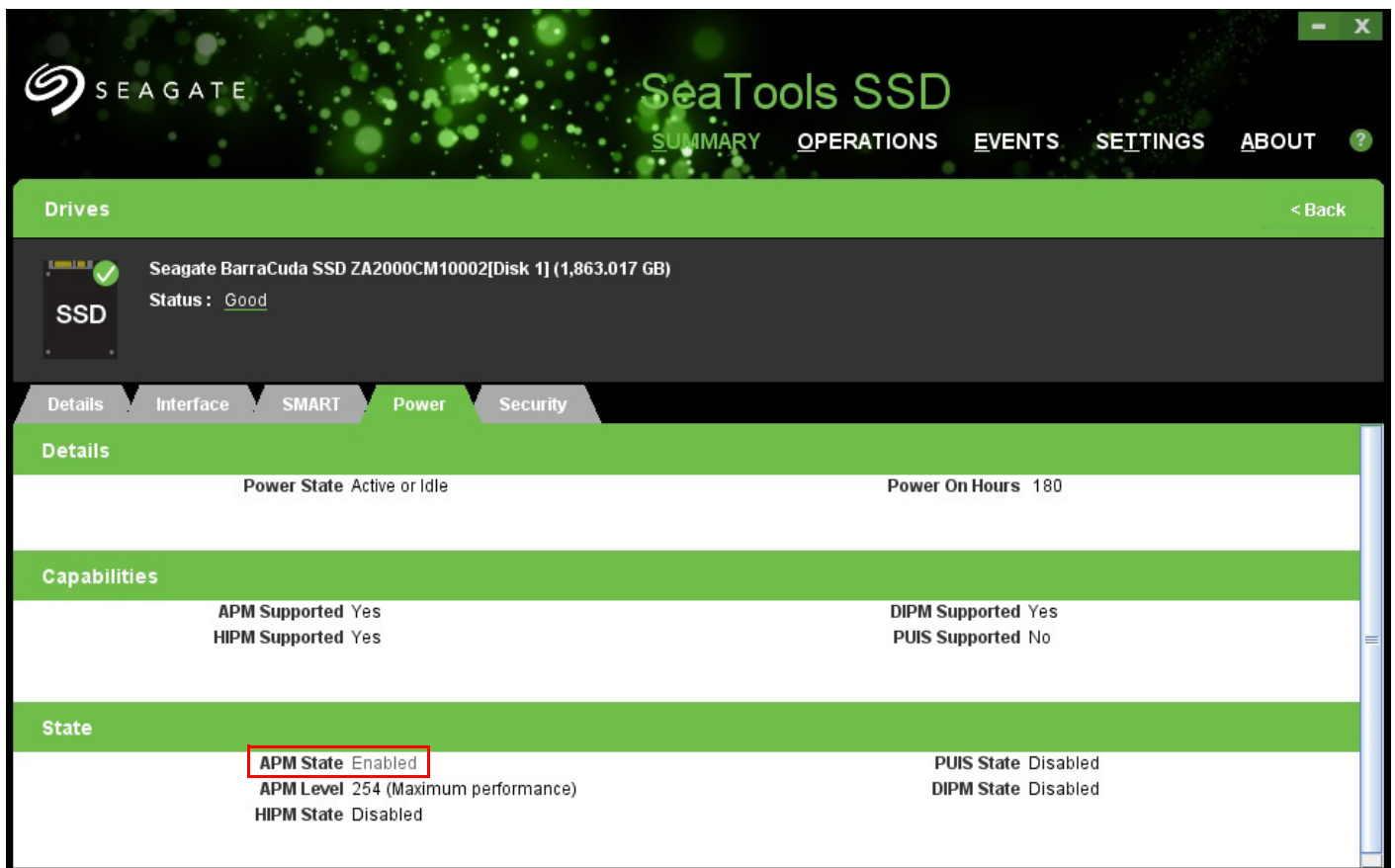
1. Go to the Summary page→Dashboard of the selected SSD→Far left pane that includes general information about the SSD.
2. Click **Details**, as shown in the figure below.

Figure 54 Drive Details



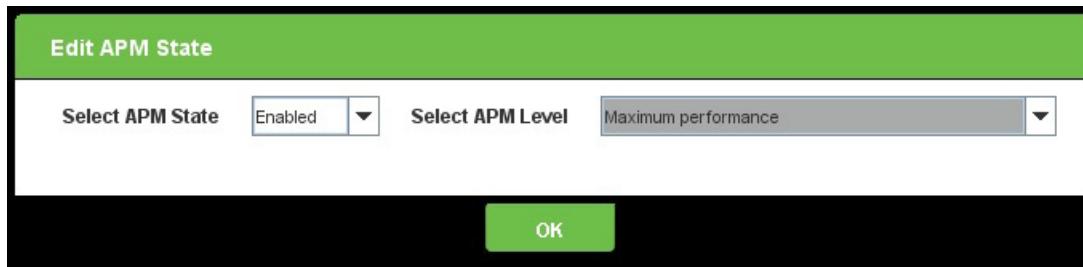
3. Select the Power tab.
4. Click on the value in the APM State, as shown in the figure below.

Figure 55 Power Tab



The following page opens.

Figure 56 Edit APM



5. Set the APM state to select to enable or disable the APM management.

**NOTE** Seagate recommends that APM is always enabled.

6. If APM state is enabled, set the APM level to determine the power performance of the device. The options for APM Levels are as follows:
  - Intermediate power management levels with Standby
  - Minimum power consumption with Standby
  - Maximum performance
  - Minimum power consumption without Standby
  - Intermediate power management levels without Standby

**NOTE** Seagate recommends keeping this setting at Maximum performance.

## 3.6 Set Tunable Capacity

SeaTools SSD GUI allows you to set tunable capacity. This feature allows you to change drive mode between Performance-Optimized and Capacity-Optimized. The drive should not be holding user data when switching modes. You must reboot the system and reformat the drive after this operation.

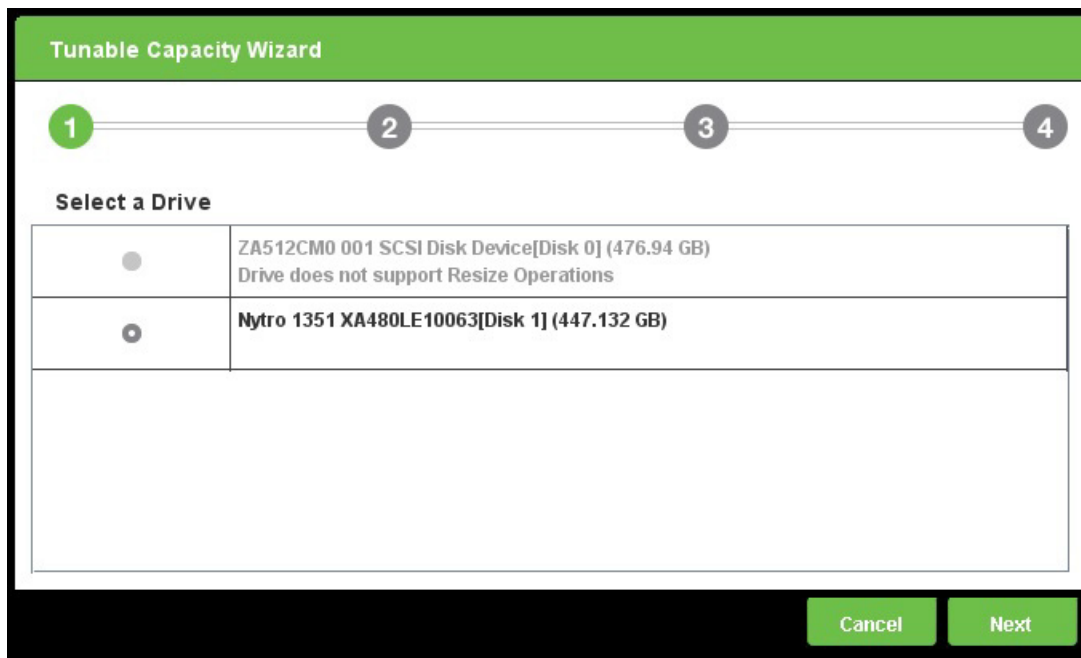
Performance-Optimized mode reserves a percentage of the physical flash space. This reserved space (called Over Provisioning) enables the drive to increase speed and reduce wear on the rest of the flash. The cost is less user capacity.

Capacity-Optimized mode releases some of this reserved space (Over Provisioning). You can use this capacity to store user data. When the drive becomes full, random write performance may be affected.

**NOTE** This feature is available only on select Seagate SSDs. If this feature is not available on your SSD, when you click on this feature, your drive will be grayed out.

1. Go to the Operations page→Set Tunable Capacity,
2. When the following page opens, select a drive and click **Next**.

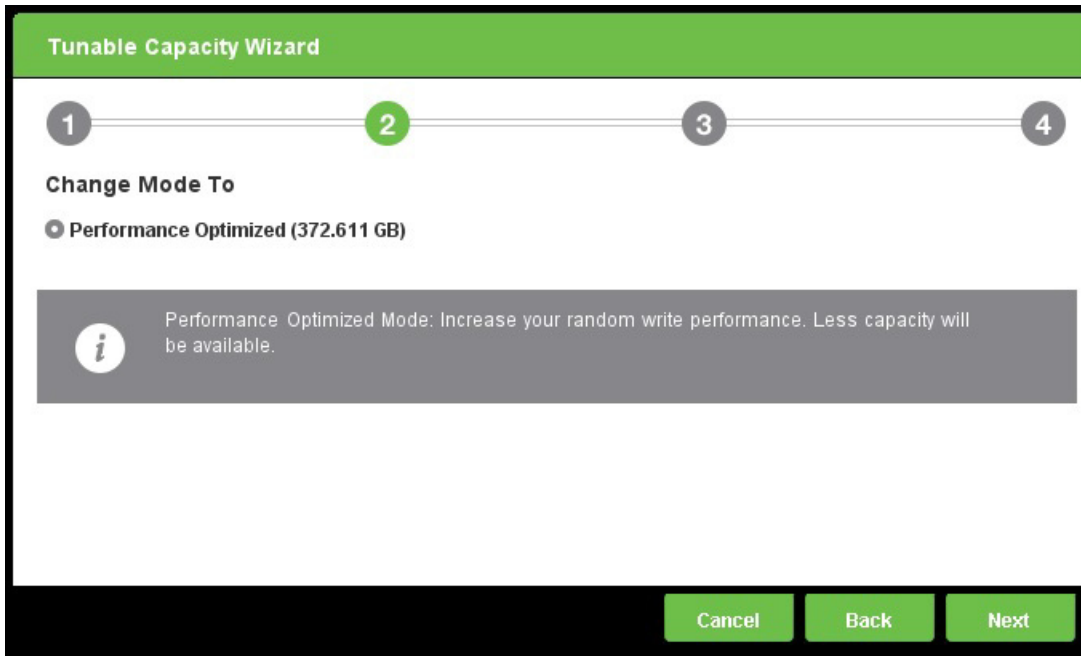
**Figure 57 Set Tunable Capacity, Select a Drive**





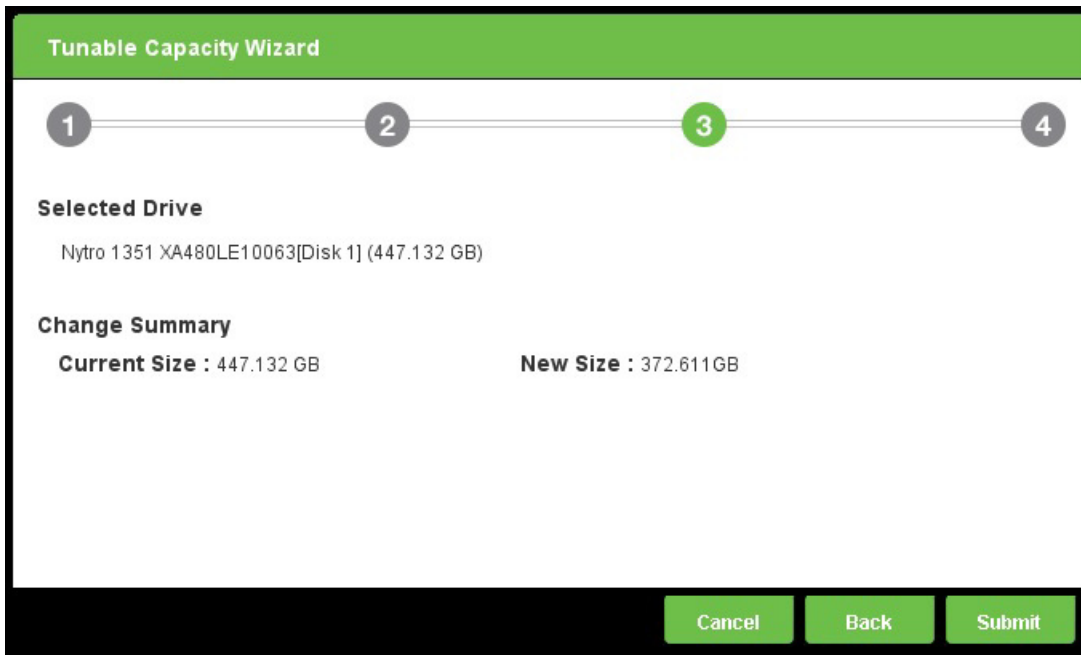
3. Click **Next** when the following page opens, indicating the Change Mode option available.

Figure 58 Set Tunable Capacity, Change Mode



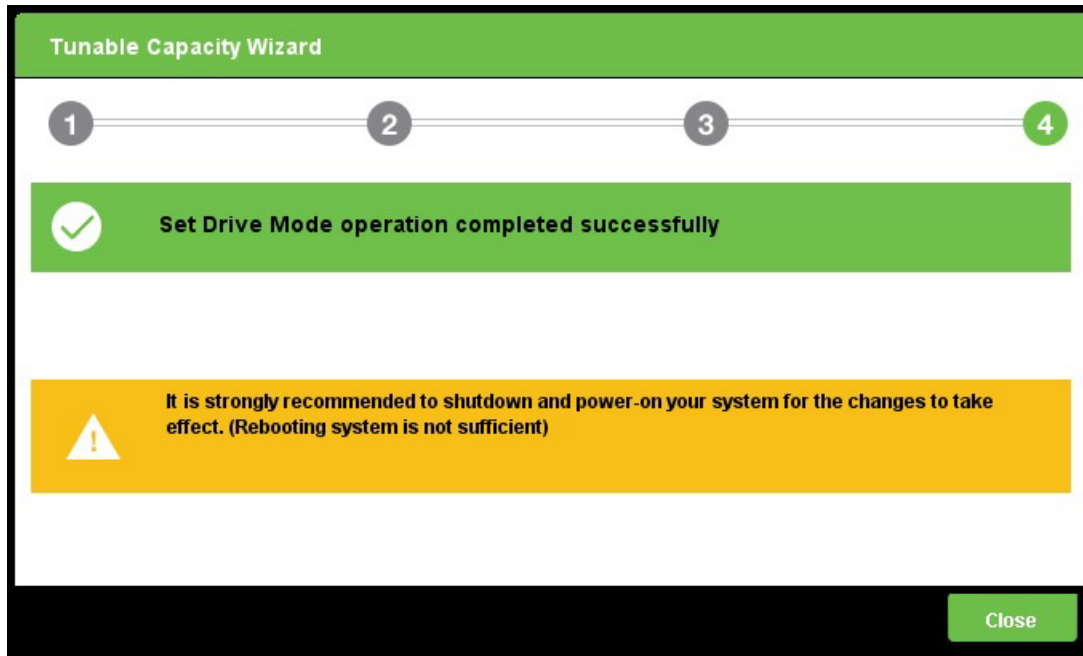
4. Click **Submit** when the Change Summary page opens.

Figure 59 Set Tunable Capacity, Change Summary



5. Click **Close** when the following page opens to indicate that the operation is complete.

**Figure 60 Set Tunable Capacity Complete**





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