

MAINTAINING MICROSOFT SCCM HEALTH THROUGH ABSOLUTE

TECH NOTE

THE CHALLENGES WITH MANAGING MICROSOFT SCCM

Microsoft Systems Center Configuration Manager (SCCM) is a widely used systems management solution. SCCM includes remote control, patch management, software distribution, operating system deployment, and inventory capabilities for Windows devices.

This functionality has evolved considerably since Microsoft first introduced what was then known as Systems Management Server in 1994, but the principal design still relies on a client and server architecture.

Any systems administrator that uses SCCM will be familiar with the common occurrence of SCCM agent corruption, or critical WMI files disappearing from a device. The reliance on the SCCM client and associated file types for not only device information, but to perform critical systems management tasks such as patching is a risky proposition. With the increasing number of devices now operating off the corporate network, this inability to see the device, let alone remediate security vulnerabilities or distribute critical software created numerous challenges. Previously there was no adequate way for organizations to know when SCCM clients stopped working, or effectively repair them when devices were off network.

At Absolute, an important part of delivering additional value is actively listening to our customers. Through numerous interviews and in collaboration with our customers and within our forums, Absolute gathered feedback on specific challenges customers face within their IT environments. For many this involved the common occurrence of SCCM files becoming corrupt, or outright missing from a device. Some customers even reported that up to 20% of their device population was not visible due to issues with SCCM clients.

APPLICATION PERSISTENCE FOR SCCM WITH ABSOLUTE

As a result of this customer feedback, the introduction of self-healing SCCM, which is the ability to report on SCCM's status and to remediate and reinstall corrupted components.

The Absolute console leverages the reliable two-way connection Absolute's patented Persistence Technology provides. Through partnerships with leading OEM partners, Persistence is already deployed in the firmware of more than a billion devices worldwide. This ability to communicate with devices, regardless of user or location, provides timely device and event information, including the status and health of the SCCM client on each device.

Compatibility: SCCM Application Persistence is applicable for customers with all versions of SCCM 2012, excluding beta versions. Device support includes Windows 7, 8/8.1, and 10.

Availability: SCCM Application Persistence is available through the Application Persistence for Microsoft Applications module, which is also included within the Absolute Resilience product edition. The module is also available as an add-on for customers having either Absolute Control or Absolute Visibility. More information on product editions available here: absolute.com/en/products/editions

Activation: Existing Absolute customers can activate this feature through either the 'Policies and Alerts' page or 'Applications – Persistence and Reports' page from the left hand side of the Absolute console. For the detailed step-by-step activation process, view the [Application Persistence Technical Guide](#) and the [Knowledge Base](#) article on Application Persistence for SCCM functionality.

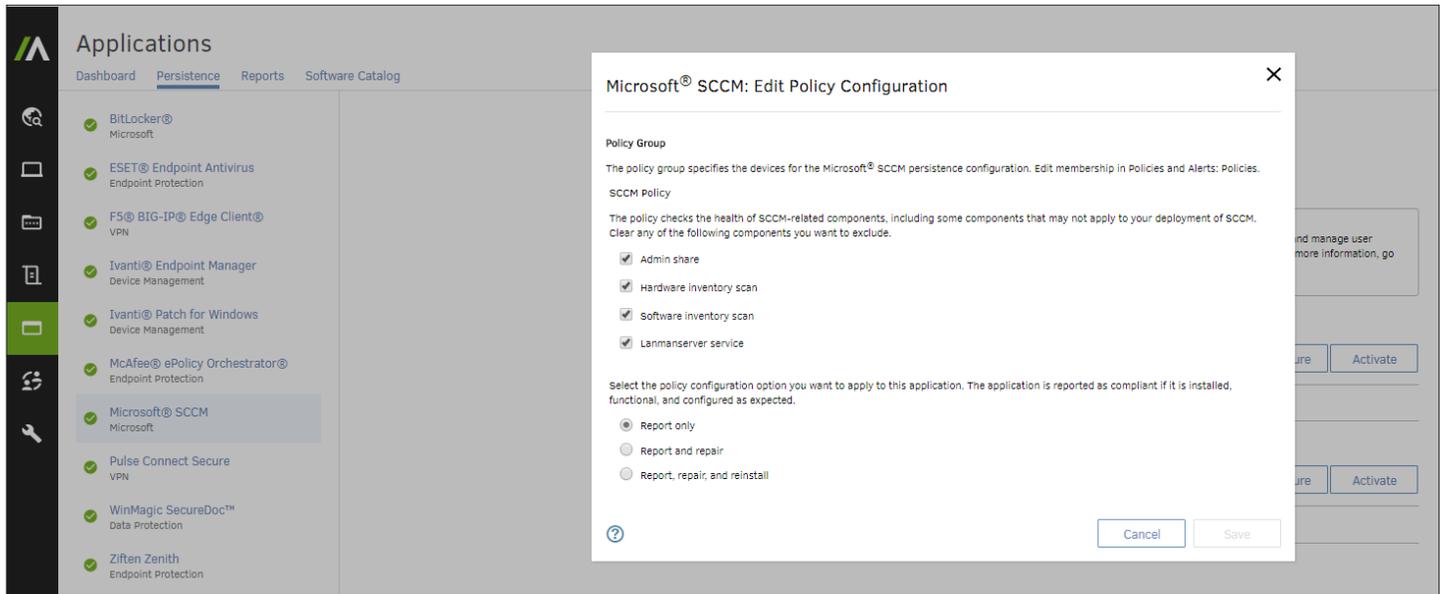


Figure 1: Enabling SCCM Persistence through the Applications menu

Implementation: When SCCM Application Persistence is activated, the Absolute agent analyzes the health of the SCCM client by running the Application Persistence engine on the device. The engine then performs a series of health checks to determine if the SCCM client is present and functioning as expected. If the client is corrupted, the engine attempts to repair the corrupted component(s). The engine runs once every six hours outside of regular Absolute agent calls.

No user input or changes to an organization's existing SCCM environment are required.

Tests performed

The SCCM Health Check is performed by the Application Persistence engine on devices that have Application Persistence for SCCM enabled.

The following SCCM health check tests are performed:

- **Windows Management Instrumentation (WMI):** tests attempt to connect to WMI components and perform a simple query
- **Presence of Admin share:** used to deploy the SCCM software remotely by allowing administrative remote access to the disk volume over the network. Tests check if this share is present and enabled.
- **Verify Local CCM path:** tests check the path to the CCM component
- **CCM service status:** tests check that CCM component is running
- **Verify Services:** tests check the SCCM client service and its dependent services are running. The following services are checked **winnmgt, lanmanserver, rpss, wuau serv, bits, and ccmexec.**
- **Registry:** tests check the registry to ensure that Distributed Component Object Model (DCOM) is a protocol and allows for remote client connections
- **Client variables:** tests check that the SCCM client variables can be received
- **Assigned site:** tests check the primary SCCM site
- **Hardware inventory:** tests check for the last hardware inventory date and time. If value cannot be retrieved or a hardware inventory scan has never been performed, the tests fail.
- **Software inventory:** tests check for the last software inventory date and time. If value cannot be retrieved or a software inventory scan has never been performed, the tests fail.

Note: The tests for Admin Share, Hardware Inventory Scan, Software Inventory Scan and the Lanmanserver Service can be optionally disabled by the user, if they so choose, by unchecking any of them in the "Edit Policy Configuration" window during configuration.

The results of these tests are collated and presented through the following reports within the Absolute console:

Application Persistence Report: The Application Persistence report provides the current health status of the SCCM client across a user's device fleet. The default version of the report shows device specific columns such as the Identifier and Device Name as well as the compliance Status column for each application available through Application Persistence, including SCCM. Additionally, the user has the option of creating a custom report having only SCCM related columns. This can be done by modifying the columns shown through the 'Show/Hide Column' button and saving the report through 'Report Options'. For more information about the columns within the Application Persistence Report, view the [Application Persistence Technical Guide](#).

Application Persistence									
Devices with current statuses of SCCM									
(*Agent Status" equal to "Active") AND ("Application Persistence > SCCM > Status" is not empty)									
All		Search		Show/Hide Columns		Report Options			
Identifier	Serial Number	Device Name	Username	Application Persistence > SCCM > Status Checked (UTC)	Application Persistence > SCCM > Last Updated (UTC)	Application Persistence > SCCM > Status	Application Persistence > SCCM > Repair Status	Application Persistence > SCCM > Status Details	
2CHMV852KCAA00780001	CNU4159XQ8	ABT22072	test	13 Dec, 2017 7:05 PM	13 Dec, 2017 7:13 PM	Compliant	Repair disabled	---	
2CHMV852KCAA00780004	VMWARE 56 4D...	DV2CORP3-W1...	DV2CORP3-W1...	10 Jan, 2018 8:12 PM	10 Jan, 2018 8:27 PM	Not compliant	Failure	[monitorSCCMReport][application: SCC...	
2CHMV852KCAA00780006	VMWARE 56 4D...	DV2CORP3-W8...	qaam.local\krypt...	13 Dec, 2017 7:05 PM	13 Dec, 2017 7:20 PM	Compliant	Repair disabled	---	
2CHMV852KCAA00780007	VMWARE 56 4D...	DV2CORP3-W1...	QA	14 Dec, 2017 7:09 PM	14 Dec, 2017 7:15 PM	Compliant	No repairs	---	
2CHMV852KCAA00780009	VMWARE 56 4D...	DV2CORP3-W8...	DV2CORP3-W8...	12 Jan, 2018 9:11 PM	12 Jan, 2018 9:13 PM	Not compliant	No repairs	[monitorSCCMReport][application: SCC...	
2CHMV852KCAA00780010	VMWARE 56 4D...	DV2CORP3-W7...	QAAM\QA	30 Nov, 2017 10:56 PM	30 Nov, 2017 11:06 PM	Not compliant	Failure	[installationChecker][appName: .appVe...	
2CHMV852KCAA00780011	CJ3K9R1	ABT11160	ABT11160\test	12 Dec, 2017 8:17 PM	12 Dec, 2017 8:31 PM	Not compliant	Failure	[monitorSCCMReport][application: SCC...	
2CHMV852KCAA00780012	VMWARE 56 4D...	QA3-WIN8-64	---	1 Dec, 2017 6:59 PM	1 Dec, 2017 7:04 PM	Compliant	No repairs	---	
2CHMV852KCAA00780013	VMWARE 56 4D...	QA3-WIN81-64	QA3-WIN81-64\QA	5 Dec, 2017 6:54 PM	5 Dec, 2017 6:54 PM	Compliant	No repairs	---	
2CHMV852KCAA00780014	VMWARE 56 4D...	QA3-W7-64	QA3-W7-64\QA	7 Dec, 2017 3:01 PM	7 Dec, 2017 3:09 PM	Compliant	No repairs	---	
2CHMV852KCAA00780015	VMWARE 56 4D...	DV2ARCH-W10-64	QAAM\kryptonite	5 Jan, 2018 9:39 PM	5 Jan, 2018 9:40 PM	Not compliant	Repair disabled	[installationChecker][appName: .appVe...	
2CHMV852KCAA00780017	VMWARE 56 4D...	DV2CORP3-W8...	DV2CORP3-W8...	13 Dec, 2017 7:04 PM	13 Dec, 2017 7:17 PM	Not compliant	Repair disabled	[installationChecker][appName: .appVe...	
2CHMV852KCAA00780018	CNU352DKKK	ABT21355	ABSOLUTE\jxim	24 Jan, 2018 5:59 PM	24 Jan, 2018 6:14 PM	Not compliant	No repairs	[monitorSCCMReport][application: SCC...	
2CHMV852KCAA00780019	G665FS1	ABT11162	ABT11162\test	13 Dec, 2017 6:18 PM	13 Dec, 2017 6:29 PM	Not compliant	Failure	[monitorSCCMReport][application: SCC...	
2CHMV852KCAA00780020	VMWARE 56 4D...	DV2CORP3-W7...	qa	24 Jan, 2018 4:06 PM	24 Jan, 2018 4:18 PM	Compliant	No repairs	---	
2CHMV852KCAA00780022	CNU418BWD6	ABT22075	ABT22075\test	22 Dec, 2017 10:03 PM	22 Dec, 2017 10:03 PM	Compliant	No repairs	---	
2CHMV852KCAA00780023	VMWARE 56 4D...	DV2CORP3-W7...	QA	16 Jan, 2018 11:59 PM	17 Jan, 2018 12:05 AM	Not compliant	No repairs	[monitorSCCMReport][application: SCC...	
2CHMV852KCAA00780025	CNU418BWD6	ABT22075	ABT22075\test	18 Jan, 2018 6:20 PM	18 Jan, 2018 6:26 PM	Compliant	No repairs	---	
2CHMV852KCAA00780026	CNU418BWD6	ABT22075	---	19 Jan, 2018 6:53 PM	19 Jan, 2018 7:08 PM	Not compliant	No repairs	[taskCommand][cmdlineoptions: --repa...	
2CHMV852KCAA00780027	CNU4159XQ8	ABT22072	test	23 Jan, 2018 2:42 AM	23 Jan, 2018 2:45 AM	Not compliant	No repairs	[taskCommand][cmdlineoptions: --repa...	

Figure 2: Application Persistence Report

Data Collected through the Application Persistence Report: Users can view the following SCCM specific fields through the Application Persistence Report. These fields can be added through the 'Show/Hide Columns' button within the report.

COLUMN FIELD	DESCRIPTION	POSSIBLE VALUES
Application Persistence > Microsoft SCCM > Last Updated (UTC)	The date and time (in UTC) the results of SCCM's status check were made available in the Absolute console. [Note: This is different from the "Last Updated (UTC)" column displayed in the default "Application Persistence" Report.]	e.g. Aug 2, 2017 9:09 PM
Application Persistence > Microsoft SCCM > Repair Status	The status of any attempted repairs.	<ul style="list-style-type: none"> • Success: all attempted repairs were successful. • Failure: the device has a status of Non-compliant and the attempted repairs were unsuccessful. • Repair disabled: The Report only option is selected for the application, so no repairs were attempted. • No repairs: the device has a status of Compliant, so no repairs were attempted.
Application Persistence > Microsoft SCCM > Status	The last detected compliance status for the SCCM client.	<ul style="list-style-type: none"> • Compliant: The SCCM client is functioning correctly. • Non-compliant: The SCCM client's configurations (e.g. services, registry files, etc.) do not comply with what is constituted as being healthy. • Error: An unexpected error occurred while health check tests were running on the device. Status information was not uploaded. • Unknown: Unable to accurately detect the status of the SCCM client. • Pending Scan Results: Either the first SCCM AP scan is yet to take place or the scan results have not reached the Absolute server yet. • Not Activated: An AP for SCCM policy is no longer active on this device.
Application Persistence > Microsoft SCCM > Status Checked (UTC)	The date and time (in UTC), the AP engine checked the SCCM client's status on the device.	e.g. Aug 2, 2017 9:09 PM
Application Persistence > Microsoft SCCM > Status Details	Lists additional details regarding the detected status of the SCCM client on the device.	<ul style="list-style-type: none"> • For Compliant instances: two emdashes (—) denotes the SCCM client being compliant on the device. However, if the Absolute agent recently performed a repair or reinstall of the client, and the client is now Compliant as a result, the details of that status change will be listed in the column. • For Non-Compliant instances: this column lists details about the specific components of the SCCM client that were checked. If either "Report and Repair" or "Report, Repair and Reinstall" was selected during activation, the column shows details about the repairs that were attempted.

Application Persistence Events Report: The Application Persistence Events Report provides historical information about the health of the SCCM client across a device fleet. Specifically, the report provides the number of remediation attempts made on an application for a specific device over the last 30 days. Clicking on the remediation number for each device provides a breakdown of repairs and reinstalls for the last 30 days. Similar to the Application Persistence Report, an SCCM customized version of the Application Persistence Events Report can be created by selecting only SCCM related columns through the 'Show/Hide Columns' button and saving it through 'Report Options'. For more information about the Application Persistence Events Report, view the [Application Persistence Technical Guide](#).

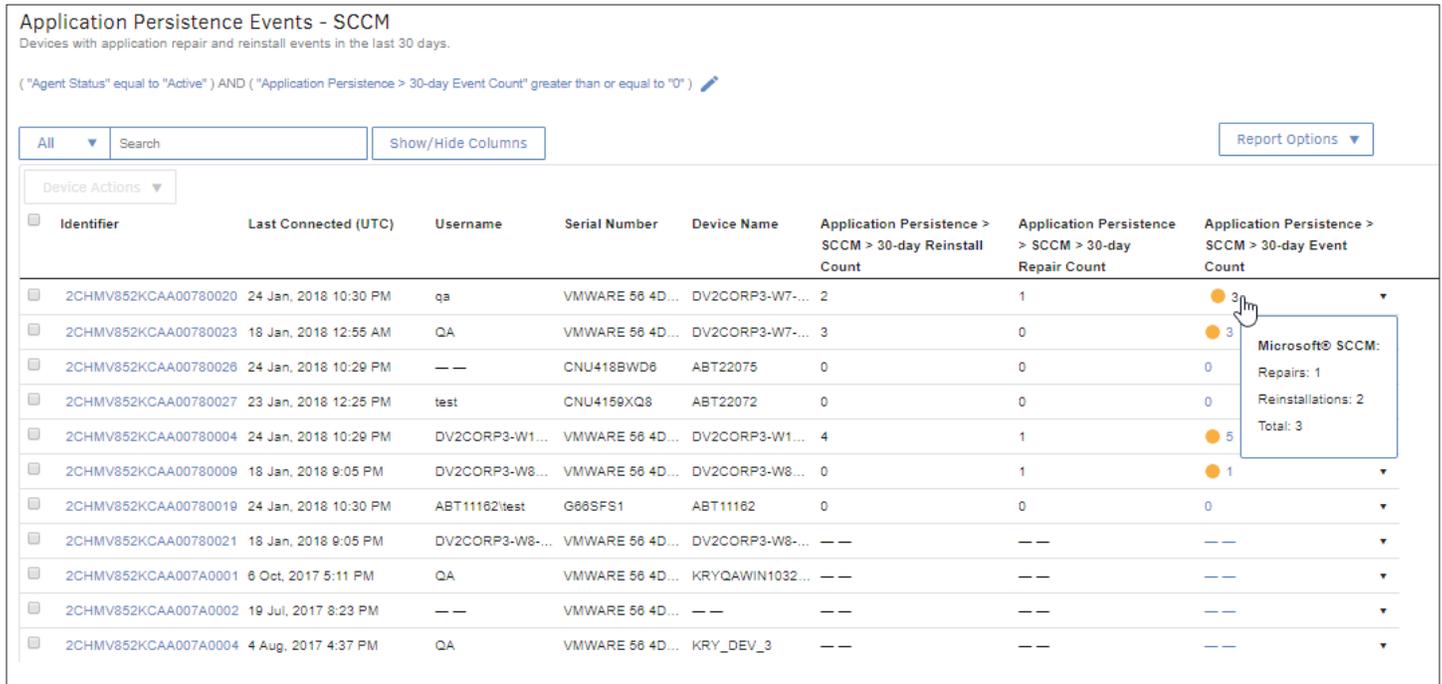


Figure 3: Application Persistence Events Report

Data Collected through the Application Persistence Events Report: Users can view the following SCCM specific fields to get historical compliance information through the Application Persistence Events Report.

COLUMN FIELD	DESCRIPTION	POSSIBLE VALUES
Application Persistence > SCCM > 30-day Event Count	Total number of SCCM remediation attempts (repairs and reinstalls) made on the device in the last 30 days. Note: Clicking on the event(s) number provides a drill down of the repair and reinstall numbers.	Any numerical value. (e.g. 50).
Application Persistence > SCCM > 30-day Repair Count	Total number of SCCM repair attempts made on the device in the last 30 days.	Any numerical value. (e.g. 50).
Application Persistence > SCCM > 30-day Reinstall Count	Total number of SCCM reinstall attempts made on the device in the last 30 days.	Any numerical value. (e.g. 50).

SCCM Reporting for Legacy Absolute DDS Customers

For existing customers that are accessing existing SCCM reports, the following pre-built reports are available

SCCM Status Report: The SCCM Status Report shows information about the current status of the SCCM client installed on managed Windows devices. This report can indicate devices where the SCCM client is missing or not functioning correctly. The number of issues for the particular device are collated within the 'Issue Count column'.

Identifier▲	Device Name	SCCM Status	Status Date	Issue Count	Username	Serial Number	Make	Model	Operating System
0PCRWQD1V0AA18Y10781	SARS-WIN7-64	Absent	07.08.2015 19:05:47	0	QA	VMWARE 56 4D DB E7 18 A6 99 56 8B ED C6 1D 27 8F 7	VMWARE, INC.	VMWARE_VIRTUAL	Windows 7 (64 bit)
1LOCFETB2JA62IQI5647	AGENT29	Needs attention	01.09.2015 00:54:27	1	Administrator	VMware 56 4D 67 DA B2 86 E8 D9 6F 6B B1 21 08 F4 0	VMware, Inc.	VMware Virtual Platform	Windows 7 (64 bit)
1LOCFETB2JA62IQI5648	LIONTEAMSCCM	Needs attention	01.09.2015 06:00:08	1	lion.qa.com\administrator	Non-unique S/N	innotek GmbH	VirtualBox	Windows 7 (32 bit)
1LOCFETB2JAA2IQE0058	SARS-WIN8-64	Absent	12.08.2015 09:55:02	0	QA	VMWARE 56 4D 7C 11 7B 92 48 E1 DE 83 C0 07 2E 8D 5	VMware, Inc.	VMware Virtual Platform	Windows 8 (64 bit)
1LOCFETB2JAA2IQE0104	ADMIN-PC	Absent	14.08.2015 08:01:24	0	Admin	Non-unique S/N	innotek GmbH	VirtualBox	Windows 7 (32 bit)

Figure 4: SCCM Status Report

SCCM Status History Report: The SCCM Status History Report shows the status change history of SCCM clients on your managed Windows devices. This allows an Administrator to determine whether a device's SCCM client is repeatedly experiencing issues that prevent it from functioning correctly.

Identifier	Device Name	SCCM Status	Status Date▼	Username	Serial Number	Make	Model	Operating System
1LOCFETB2JA62IQI5642	ADMIN-PC01	Needs attention	18.06.2015 04:01:01	Admin	Non-unique S/N	INNOTEK GMBH	VIRTUALBOX	Windows 7 (32 bit)
1LOCFETB2JA62IQI5642	ADMIN-PC01	Absent	18.06.2015 03:56:54	Admin	Non-unique S/N	INNOTEK GMBH	VIRTUALBOX	Windows 7 (32 bit)
1LOCFETB2JA62IQI5642	ADMIN-PC01	OK	18.06.2015 03:45:14	Admin	Non-unique S/N	INNOTEK GMBH	VIRTUALBOX	Windows 7 (32 bit)
1LOCFETB2JA62IQI5642	ADMIN-PC01	Needs attention	18.06.2015 01:54:34	Admin	Non-unique S/N	INNOTEK GMBH	VIRTUALBOX	Windows 7 (32 bit)
1LOCFETB2JA62IQI5642	ADMIN-PC01	Absent	18.06.2015 01:45:06	Admin	Non-unique S/N	INNOTEK GMBH	VIRTUALBOX	Windows 7 (32 bit)
1LOCFETB2JA62IQI5642	ADMIN-PC01	OK	18.06.2015 01:25:02	Admin	Non-unique S/N	INNOTEK GMBH	VIRTUALBOX	Windows 7 (32 bit)
1LOCFETB2JA62IQI5642	ADMIN-PC01	Absent	18.06.2015 01:12:08	Admin	Non-unique S/N	INNOTEK GMBH	VIRTUALBOX	Windows 7 (32 bit)
1LOCFETB2JA62IQI5642	ADMIN-PC01	OK	18.06.2015 00:58:56	Admin	Non-unique S/N	INNOTEK GMBH	VIRTUALBOX	Windows 7 (32 bit)
1LOCFETB2JA62IQI5642	ADMIN-PC01	Needs attention	18.06.2015 00:49:15	Admin	Non-unique S/N	INNOTEK GMBH	VIRTUALBOX	Windows 7 (32 bit)
1LOCFETB2JA62IQI5642	ADMIN-PC01	OK	18.06.2015 00:16:47	Admin	Non-unique S/N	INNOTEK GMBH	VIRTUALBOX	Windows 7 (32 bit)

Figure 5: SCCM Status History Report

Note: A change is reported if the device's SCCM status changes, even if the "status type" remains the same. For example, if a health check was performed and two of the tests failed, the status is set to "Needs attention". If these issues are not remediated, and the health check is performed again and three of the tests fail, this is reported as an SCCM status change. For an SCCM status to be reported as "Needs attention", the device is required to have SCCM active on the device in the past. Devices that do not have the SCCM client currently installed, or have never had the SCCM client installed, will be reported as "Absent".

The SCCM Status Report and SCCM Status History Report will be enhanced in future product releases.

To see Application Persistence in action for yourself, please visit absolute.com/contact