

Altair Control 2019.2

Release Notes



 Altair | PBS Works™

PBS Works is a brand of  Altair

Intellectual Property Rights Notice: Copyrights, Trademarks, Trade Secrets, Patents & Third Party Software Licenses

Updated: July 9, 2019.

Altair® PBS Works® v.2019.2

Accelerating Innovation in the Cloud™

Copyright© 1994-2019 Altair Engineering Inc. All Rights Reserved.

Special Notice: Pre-release versions of Altair software are provided 'as is', without warranty of any kind. Usage is strictly limited to non-production purposes.

PBS Works - Accelerating Innovation in the Cloud™

Altair PBS Professional™ ©1994-2019
Altair Control™ © 2008-2019; (formerly PBS Control)
Altair Access™ © 2008- 2019; (formerly PBS Access)
Altair Accelerator™ © 1995- 2019; (formerly NetworkComputer)
Altair Accelerator Plus™ © 1995- 2019; (formerly WorkloadXelerator)
Altair FlowTracer™ © 1995- 2019; (formerly FlowTracer)
Altair Allocator™ © 1995- 2019; (formerly LicenseAllocator)
Altair Monitor™ © 1995- 2019; (formerly LicenseMonitor)
Altair Hero™ © 1995- 2019; (formerly HERO)
Altair Software Asset Optimization™ (SAO) © 2007- 2019



Note:

Compute Manager™ ©2012-2017 is now part of Altair Access
Display Manager™ ©2013-2017 is now part of Altair Access
PBS Application Services™ ©2008-2017 is now part of Altair Access
PBS Analytics™ ©2008-2017 is now part of Altair Control
PBS Desktop™ ©2008-2012 is now part of Altair Access, specifically Altair Access desktop, which also has Altair Access web and Altair Access mobile
e-Compute™ ©2000-2010 was replaced by “Compute Manager” which is now Altair Access

Altair HyperWorks - A Platform for Innovation®

Altair AcuConsole™ ©2006-2019
Altair AcuSolve™ ©1997-2019
Altair ElectroFlo™ ©1992-2019
Altair ESAComp™ ©1992-2019
Altair Feko™ ©1999-2014 Altair Development S.A. (Pty) Ltd.; ©2014-2018 Altair Engineering Inc.
Altair Flux™ ©1983-2019
Altair FluxMotor™ ©2017-2019
Altair HyperCrash™ ©2001-2019

Altair HyperGraph™ ©1995-2019
Altair HyperMesh™ ©1990-2019
Altair HyperStudy™ ©1999-2019
Altair HyperView™ ©1999-2019
Altair Virtual Wind Tunnel™ ©2012-2019
Altair HyperXtrude™ ©1999-2019
Altair MotionSolve™ ©2002-2019
Altair MotionView™ ©1993-2019
Altair Multiscale Designer™ ©2011-2019
Altair OptiStruct™ ©1996-2018
Altair Radioss™ ©1986-2019
Altair SimLab™ ©2004-2019
Altair SimSolid™ ©2015-2019
Altair nanoFluidX™ © 2013-2018 Fluidyna GmbH, © 2018-2019 Altair Engineering Inc.
Altair ultraFluidX™ © 2010-2018 Fluidyna GmbH, © 2018-2019 Altair Engineering Inc.
Altair WinProp™ ©2000-2019
Altair ConnectMe™ ©2014-2019
Various other products including Altair solidThinking Platform software products.

Altair Packaged Solution Offerings (PSOs)

Altair Automated Reporting Director™ ©2008-2019
Altair GeoMechanics Director™ ©2011-2019
Altair Impact Simulation Director™ ©2010-2019
Altair Model Mesher Director™ ©2010-2019
Altair NVH Director™ ©2010-2019
Altair Squeak and Rattle Director™ ©2012-2019
Altair Virtual Gauge Director™ ©2012-2019
Altair Weight Analytics™ ©2013-2019
Altair Weld Certification Director™ ©2014-2019
Altair Multi-Disciplinary Optimization Director™ ©2012-2019

solidThinking - Where Innovation Begins™

Altair Inspire™ ©2009-2019 including Altair Inspire Motion and Altair Inspire Structures
Altair Inspire™ Extrude-Metal ©1996-2019 (formerly Click2Extrude®-Metal)
Altair Inspire™ Extrude-Polymer ©1996-2019 (formerly Click2Extrude®-Polymer)
Altair Inspire™ Cast ©2011-2019 (formerly Click2Cast®)
Altair Inspire™ Form ©1998-2019 (formerly Click2Form®)
Altair Inspire™ Mold ©2009-2019
Altair Inspire™ Studio ©1993-2019 (formerly 'Evolve')
Altair Compose™ ©2007-2019 (formerly solidThinking Compose®)
Altair Activate™ ©1989-2019 (formerly solidThinking Activate®)
Altair Embed™ ©1989-2019 (formerly solidThinking Embed®)

- Altair Embed SE™ ©1989-2019 (formerly solidThinking Embed® SE)
 - Altair Embed/Digital Power Designer ©2012-2019
- Altair SimLab™ ©2004-2019
Altair 365™ ©1994-2019

Altair SmartWorks™ - Innovation Intelligence®

- Altair SmartCore™ ©2011-2019
Altair SmartEdge™ ©2010-2019
Altair SmartSight™ ©2011-2019

Altair intellectual property rights are protected under U.S. and international laws and treaties. Additionally, Altair software is protected under patent #6,859,792 and other patents pending. All other marks are the property of their respective owners.

ALTAIR ENGINEERING INC. Proprietary and Confidential. Contains Trade Secret Information.

Not for use or disclosure outside of Altair and its licensed clients. Information contained in Altair software shall not be decompiled, disassembled, “unlocked”, reverse translated, reverse engineered, or publicly displayed or publicly performed in any manner. Usage of the software is only as explicitly permitted in the end user software license agreement. Copyright notice does not imply publication.

Third party software licenses

AcuConsole contains material licensed from Intelligent Light (www.ilight.com) and used by permission.

Software Security Measures:

Altair Engineering Inc. and its subsidiaries and affiliates reserve the right to embed software security mechanisms in the Software for the purpose of detecting the installation and/or use of illegal copies of the Software. The Software may collect and transmit non-proprietary data about those illegal copies. Data collected will not include any customer data created by or used in connection with the Software and will not be provided to any third party, except as may be required by law or legal process or to enforce our rights with respect to the use of any illegal copies of the Software. By using the Software, each user consents to such detection and collection of data, as well as its transmission and use if an illegal copy of the Software is detected. No steps may be taken to avoid or detect the purpose of any such security mechanisms.

Technical Support

Location	Telephone	e-mail
Australia	+1 800 174 396	anz-pbssupport@india.altair.com
China	+86 (0)21 6117 1666	es@altair.com.cn
France	+33 (0)1 4133 0992	pbssupport@europe.altair.com
Germany	+49 (0)7031 6208 22	pbssupport@europe.altair.com
India	+91 80 66 29 4500 +1 800 425 0234 (Toll Free)	pbs-support@india.altair.com
Italy	+39 800 905595	pbssupport@europe.altair.com
Japan	+81 3 6225 5821	pbs@altairjp.co.jp
Korea	+82 70 4050 9200	support@altair.co.kr
Malaysia	+91 80 66 29 4500 +1 800 425 0234 (Toll Free)	pbs-support@india.altair.com
North America	+1 248 614 2425	pbssupport@altair.com
Russia	+49 7031 6208 22	pbssupport@europe.altair.com
Scandinavia	+46 (0) 46 460 2828	pbssupport@europe.altair.com
Singapore	+91 80 66 29 4500 +1 800 425 0234 (Toll Free)	pbs-support@india.altair.com
South Africa	+27 21 831 1500	pbssupport@europe.altair.com
South America	+55 11 3884 0414	br_support@altair.com
United Kingdom	+44 (0)1926 468 600	pbssupport@europe.altair.com

This document is proprietary information of Altair Engineering, Inc.

Altair Control™ Release Notes

These release notes describe the new features, bug fixes, and known issues for Control 2019.2. Please see the following sections:

- [About Control](#)
- [System Requirements](#)
- [Supported Product Configurations](#)
- [Prerequisites for Installation](#)
- [New Features](#)
- [Resolved Issues](#)
- [Known Issues](#)

About Control

Control is an easy-to-use web application for monitoring and managing jobs and nodes of an High-Performance Computing (HPC) cluster with advanced analytics to support data-driven planning and decision making. Also, administrators can perform what-if analysis for determining the most productive way to scale an HPC system's resources by running simulations and manage cloud appliances.

Features include:

- Single pane of glass: configure, deploy, monitor, burst, manage, troubleshoot, simulate, analyze, tune
- Real-time monitoring: simplify troubleshooting and maintenance
- Reporting: Analytics powered by Envision™
- Workload simulator: simulate and optimize infrastructure sizing
- Multi-cloud bursting: burst to any cloud for peak loads
- One-click appliance deployment: effortless for public, hybrid, and on-premise / private clouds
- Modern UX: drag-and-drop simplicity

To obtain the latest release package, contact your Altair sales representative by writing to sales@altair.com or support@altair.com. For more information, visit us at www.pbsworks.com.

System Requirements

Supported Platforms

Control is supported on the following Linux 64bit platforms:

- CentOS 7.2, 7.3, 7.4, 7.5 and 7.6
- RHEL 7.2, 7.3, 7.4, 7.5 and 7.6
- SLES 12 SP2



Minor versions of the operating systems listed above can be installed. However, the installer will issue a warning message indicating that the unsupported operating system may not perform as expected. SLES 12 SP3 has not yet been tested.

Supported Browser

The latest version of the following browsers is supported:

- Chrome
- Firefox
- Safari
- IE11



For IE11 to render the Control web pages correctly, the Compatibility View mode in IE11 must be disabled.

Hardware Requirements

Altair Control requires a minimum hardware configuration based on the deployment type selected at installation time:

Table 1. Hardware Specifications by Deployment Type

Deployment Type	Feature Set	Minimum	Recommended
Standard	Web Interface, Monitor, Configure	4 GB, 4 cores	8 GB, 8 cores
Power	Web Interface, Monitor, Configure, Simulator, Analyze	20 GB, 8 cores	24 GB, 12 cores
Extended	Web Interface, Monitor, Configure, Simulator, Analyze, Cloud	28 GB, 12 cores	32 GB, 16 cores

Additional cores and memory may be required depending upon the size of your site's HPC cluster. Large environments may need more memory for Analyze.

Data Collector Hardware Requirements

At least 10 GB of free hard disk space and two (2) GB of free RAM should be available on each server where the Data Collectors are installed. For sites with a very large PBS Professional accounting log dataset (30-50 million job records), allow for free hard disk space which is larger than the current disk space being used by the PBS Professional accounting log directory.

Supported Product Configurations

The currently supported product configurations are:

PBS Professional	MongoDB	Allocation Manager	Control
18.2.x and 19.2.1	3.4 and 3.6	2019.1 and 2019.2	2019.2



To use the new Cloud bursting features available with Control 2019.x requires PBS Professional 19.2.1 to be installed on the PBS Server.

Prerequisites for Installation

Please read the *Altair Control Administrator's Guide* for information about deployment options, required ports, components that must be installed and the order in which they are installed, and any specific installation prerequisites.

Third-Party Software License Information

Third-party software license and copyright information can be found in the following files. These files are located wherever the Release Notes are available.

- ControlReleaseNotesAddendumCloudThirdPartyLicenses.pdf
- ControlReleaseNotesAddendumControlThirdPartyLicenses.pdf

New Features

- [Monitor New Features](#)
- [Simulator Improvements](#)
- [Access Control Improvements](#)
- [Installation Improvements](#)
- [Platform Improvements](#)
- [Licensing Improvements](#)

Monitor New Features

The following Monitor features have been added:

- Ability to unsubscribe from Monitoring alerts.
- The list of Allocation Manager accounts, account balances, or account transactions can be sorted.
- Searching the list of Allocation Manager accounts, account balances, or account transactions based on a search category and a user entered search term is now available.
- Allocation Manager accounts, account balances, or account transactions data can be exported to a Comma Separated Values (CSV) file for further inspection and analysis.

Simulator Improvements

The following Simulator improvements have been made:

- When importing a snapshot, the snapshot is checked for options, attributes, or features that make the simulation behavior unpredictable. If found, the snapshot is rejected.
- The simulator back-end has been upgraded to the latest version.

Access Control Improvements

The following access control improvements have been made:

- A new role Configure Viewer has been added. This role allows view-only access to the features available via the Configure tab, allowing the user to view HPC workload manager settings and parameters.

Installation Improvements

The Basic installation type now offers three deployment types. Different components are installed based on the deployment type selected. [Hardware Requirements](#) differ depending upon the deployment type.

- Standard:
 - Web Interface
 - Monitor
 - Configure
- Power:
 - Web Interface
 - Monitor
 - Configure
 - Simulator
 - Analyze
- Extended:
 - Web Interface
 - Monitor
 - Configure
 - Simulator
 - Analyze
 - Cloud

Platform Improvements

The following platform improvements have been made:

- Resource consumption has been decreased, reducing the memory and CPU requirements for installing and running Control.
- A diagnosis script for capturing log and other system data for troubleshooting issues (`pbswinstall_agent.py`) has been incorporated into the `pbs-control-manager` command. Syntax for the command is:

```
pbs-control-manager diagnosis --diagnosis-report-directory OUTPUT_PATH
```

Licensing Improvements

The following licensing improvements have been made:

- The licensing model has changed for Control. A PBSWorksNode is equivalent to one PBSProNode, which licenses one physical node, subject to a four-device limit, where devices include CPU sockets, GPUs, and Xeon Phis. For example, a node with two CPU sockets and four GPUs would consume two PBSWorksNodes licenses.

Resolved Issues

This section provides information about issues that have been resolved for the Control 2019.2 release:

- [PC-2361 Bulk job run action on queued jobs removes the jobs from the Monitor view](#)
- [PC-2771 Transaction record associated with a reconciliation is not displayed](#)

PC-2361 Bulk job run action on queued jobs removes the jobs from the Monitor view

Summary: Performing a bulk job run action on queued jobs removes the jobs from the Monitor view until the next state is achieved. For example, 100 queued jobs are selected and a request to move these jobs to a running state is performed. The jobs are not viewable until they are all in a running state.

Resolution: So the expected behavior is that while Control is waiting for PBS Pro to complete the action for ALL jobs, the jobs that are still waiting to be processed by PBS Pro have a job status of a AJAX spinner and the job cannot be selected for any other actions. Once the action is complete, the job state is updated to the new state.

PC-2771 Transaction record associated with a reconciliation is not displayed

Summary: When Allocation Manager accounts are reconciled after a job completes, the associated transaction record is not being displayed in the Control UI. However, the reconciliation is accounted for in the data displayed on the Accounts and Budget tabs.

Resolution: The transaction record is now being displayed.

Known Issues

This section provides information about known issues with Control 2019.2:

- [PC-821 Charts are not correct when preemption is enabled in PBS](#)
- [PC-1013 Wait time of rerun jobs is reported wrong in PBSA](#)
- [PC-1556 Control installation should work with default system libraries](#)
- [PC-2166 Unable to run simulations on SLES 12 SP2](#)
- [PC-2441 PAS 13.2 can fail to deploy properly on SUSE/SLES](#)
- [PC-2503 IE browser error when displaying charts in Analytics](#)
- [PC-2738 Stakeholder is not able to add the initial credit to an AM project through the UI](#)
- [PC-2962 Control license server not generating logs due to missing log4j library](#)

PC-821 Charts are not correct when preemption is enabled in PBS

Summary: Preemption is not taken into consideration in the chart calculations.

Work Around: No workaround is available for this issue. A fix is planned for a future release of Control.

PC-1013 Wait time of rerun jobs is reported wrong in PBSA

Summary: Wait time for jobs that have been rerun is being calculated incorrectly.

Work Around: No workaround is available for this issue. A fix is planned for a future release of Control.

PC-1556 Control installation should work with default system libraries

Summary: For some RHEL 7.4 or SLES 12 SP2 installations there may be incompatibilities with system libraries like OpenSSL that will be reported in the installer logs.

Work Around: Install the necessary system libraries needed for completing the installation.

PC-2166 Unable to run simulations on SLES 12 SP2

Summary: On SLES 12 SP2 platforms, after a simulation is submitted the following error is displayed:

```
Invalid state detected for simulation: SIM_FAILED. Redirecting to the simulation list page.
```

Resolution: PAS 13.2 packages a Python which was compiled without certain SSL libraries. A workaround is to recompile Python:

1. Verify that an up-to-date version of PyOpenSSL (17x+) is installed on the machine hosting Control.

```
rpm -qa pyOpenSSL*
```

You can find the release history of PyOpenSSL at <https://pypi.org/project/pyOpenSSL/#history>

2. Navigate to /opt/altair/pas/13.2/pas/python.
3. sudo to root.

```
sudo su
```

4. Recompile python.

```
make clean && ./configure --prefix=$PWD && make && make install
```

5. Restart PAS.

```
/etc/init.d/pas restart
```

PC-2441 PAS 13.2 can fail to deploy properly on SUSE/SLES

Summary: Simulations fail and messages similar to the following error are logged:

```
xxx simulation failed stage 2, error retrieving results from PAS, no file xxx.results exists
```

Work Around: On SLES/SUSE platforms, intermittently PAS 13.2 fails to deploy properly, such that the zip and unzip utilities are not placed in the correct location.

A workaround is to recompile the PAS included Python and replace zip/unzip with links to the system installed version:



The workaround assumes that zip and unzip are installed in /usr/bin/.

1. Rebuild PAS python

```
cd /opt/altair/pas/13.2/pas/python
```

```
make clean && ./configure --prefix=/opt/altair/pas/13.2/pas/python && make && make install
```

2. Link in working zip/unzip

```
mv /opt/altair/pas/13.2/pas/bin/Linux-x86_64/zip /opt/altair/pas/13.2/pas/bin/Linux-x86_64/PAS_packaged_zip
```

```
ln -s /usr/bin/zip /opt/altair/pas/13.2/pas/bin/Linux-x86_64/zip
```

```
mv /opt/altair/pas/13.2/pas/bin/Linux-x86_64/unzip /opt/altair/pas/13.2/pas/bin/Linux-x86_64/PAS_packaged_unzip
```

```
ln -s /usr/bin/unzip /opt/altair/pas/13.2/pas/bin/Linux-x86_64/unzip
```

PC-2503 IE browser error when displaying charts in Analytics

Summary: After creating a chart, the following error is displayed:

```
Object doesn't support property or method 'startsWith'.
```

Work Around: An IE11 browser issue prevents the chart from being displayed in Analytics. Try switching to another browser such as Chrome or Firefox.

PC-2738 Stakeholder is not able to add the initial credit to an AM project through the UI

Summary: Currently the Stakeholder is unable to add the initial credit to a new AM project through the Control UI. The project is displayed only after credit is added to the project through the AM CLI and then the project is visible in the Budgets tab.

Work Around: This is expected behavior for Control 2019.2. No workaround is available for adding the initial credit to a project except by using the AM CLI. An enhancement is planned for a future release of Control.

PC-2962 Control license server not generating logs due to missing log4j library

Summary: Licensing logs are not generated and the log files stored at PC_HOME/logs/license are empty.

Work Around:

1. Login to the machine where Control is installed as the Service User (defined during the installation of Control).
2. Navigate to PC_HOME/data/pbswauth/tomcat/webapps/AAService/WEB-INF/lib.
3. Copy log4j-1.2.17.jar to PC_HOME/data/pbswauth/tomcat/webapps/license/WEB-INF/lib.
4. Verify that the owner of log4j-1.2.17.jar is the Service User.
5. Restart Control.

```
pbs-control-manager restart
```