NAVOPS LAUNCH RELEASE NOTES

Version 2.1
# Table of Contents

- Table of Contents .......................... 2
- UNIVA TERM LICENSE ....................... 3
- NAVOPS LAUNCH 2.1 ......................... 5

## SOFTWARE COMPATIBILITY
- SUPPORTED OPERATING SYSTEMS ........... 5
- SUPPORTED VERSIONS OF UNIVA GRID ENGINE 5
- SUPPORTED VERSIONS OF SLURM ............ 5

## KNOWN ISSUES

## CHANGE LOG
- NAVOPS LAUNCH V2.1.0 ...................... 6
- NAVOPS LAUNCH V2.0.0 ...................... 10
- NAVOPS LAUNCH V1.1.1 ...................... 10
- NAVOPS LAUNCH V1.1.0 ...................... 11
- NAVOPS LAUNCH V1.0.1 ...................... 11
- NAVOPS LAUNCH V1.0.0 ...................... 11
TERM SOFTWARE LICENSE AGREEMENT

This Agreement (defined below) is between the individual or entity agreeing to this Agreement and Univa Corporation, a Delaware corporation (Univa) with its registered office at 2300 N Barrington Road, Suite 400, Hoffman Estates, IL 60169.

BY ACCEPTING THIS AGREEMENT, EITHER BY CLICKING A BOX INDICATING YOUR ACCEPTANCE OR BY EXECUTING A QUOTATION THAT REFERENCES THIS AGREEMENT, YOU AGREE TO THE TERMS OF THIS AGREEMENT. IF YOU ARE ENTERING INTO THIS AGREEMENT ON BEHALF OF A COMPANY OR OTHER LEGAL ENTITY, YOU REPRESENT THAT YOU HAVE THE AUTHORITY TO BIND SUCH ENTITY TO THESE TERMS AND CONDITIONS, IN WHICH CASE “CUSTOMER” SHALL REFER TO SUCH ENTITY. IF YOU DO NOT HAVE SUCH AUTHORITY, OR IF YOU DO NOT AGREE WITH THESE TERMS AND CONDITIONS, THEN YOU MUST NOT ACCEPT THIS AGREEMENT AND MAY NOT USE THE UNIVA SOFTWARE.

1. SCOPE. This Agreement governs the licensing of the Univa Software and Support provided to Customer.

   - Univa Software means the software described in the quotation referencing this Agreement (“Quotation”), all updates and enhancements provided by Univa, Univa’s user documentation for such software, and license keys (Univa Software). This Software is licensed and is not sold to Customer.

   - Third-Party Software/Open Source Software licensing terms are addressed at the bottom of this Agreement.

   - Capacity means the amount of computing resources on which Customer is licensed to use the Univa Software, as described on the applicable Quotation.

2. LICENSE. Subject to the terms of this Agreement, Univa grants Customer a non-exclusive, non-transferable, non-sub licensable, license, solely during the term of this Agreement and in accordance with (and not to exceed) the Capacity, to install and use the Univa Software on Customer-controlled systems (including Customer-controlled cloud computing environments) for Customer’s internal business purposes. If Customer is installing the Univa Software, Univa further grants Customer the right to make a reasonable number of copies of the Univa Software for archival and backup purposes. Customer’s contractors and majority owned affiliates are allowed to use the Univa Software under the terms of this Agreement. Customer is responsible for compliance with the terms of this Agreement.

3. RESTRICTIONS. Univa reserves all rights not expressly granted in Section 2 above. Without limiting the preceding sentence, Customer may not, and covenants that it will not, directly or indirectly, and may not authorize any third party to:

   (a) Sell, transfer, assign, sublicense, or rent the Univa Software or use the Univa Software for the benefit of third parties (including through as a software service provider or in an outsourcing environment);

   (b) Reverse engineer (except to the extent expressly permitted by applicable law despite this limitation), decompile, disassemble, modify, translate, or otherwise attempt to discover the source code of, the Univa Software;

   (c) Except for a reasonable number of backup or archival copies, copy the Univa Software;

   (d) Create derivative works from the Univa Software;

   (e) Circumvent or otherwise interfere with any authentication or security measures of the Univa Software.

4. PROPRIETARY RIGHTS AND CONFIDENTIALITY.

   (a) Proprietary Rights. The Univa Software, workflow processes, designs, know-how and other technologies provided by Univa as part of the Univa Software are the proprietary property of Univa and its licensors, and all right, title and interest in and to such items, including all associated intellectual property rights, remain only with Univa. The Univa Software is protected by applicable copyright, trade secret, and other intellectual property laws. Customer may not remove any product identification, copyright, trademark or other notice from the Univa Software.

   (b) Confidentiality. Recipient may not disclose Confidential Information of Discloser to any third party or use the Confidential Information in violation of this Agreement.

   (i) Confidential Information means all proprietary or confidential information that is disclosed to the recipient (Recipient) by the discloser (Discloser), and includes, among other things:

      - any and all information relating to Univa Software or Support provided by a Discloser, its financial information, software code, flow charts, techniques, specifications, development and marketing plans, strategies, and forecasts;

      - as to Univa, the Univa Software and the terms of this Agreement (including without limitation, pricing information).

   (ii) Confidential Information excludes information that:

      - was rightfully in Recipient’s possession without any obligation of confidentiality before receipt from the Discloser;

      - is or becomes a matter of public knowledge through no fault of Recipient;

      - is rightfully received by Recipient from a third party without violation of a duty of confidentiality;

      - is independently developed by or for Recipient without use or access to the Confidential Information; or
Customer acknowledges that any misuse or threatened misuse of the Univa Software may cause immediately irreparable harm to Univa for which there is no adequate remedy at law. Univa may seek immediate injunctive relief in such event.

5. PAYMENT. Customer will pay all fees due under a Quotation within 30 days of the invoice date, plus applicable sales, use and other similar taxes.

6. WARRANTY DISCLAIMER. UNIVA DISCLAIMS ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF TITLE, NONINFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE UNIVA SOFTWARE MAY NOT BE ERROR FREE, AND USE MAY BE INTERRUPTED.

7. TERM AND TERMINATION. This Agreement commences on the date it is accepted by or on behalf of Customer and expires as set forth on the applicable Quotation. This Agreement will be automatically renewed on its expiry for an additional one year period unless a written notification of termination has been received 60 days prior to term expiry. Either party may terminate this Agreement upon a material breach of the other party after a 30 day notice/cure period, if the breach is not cured during such time period. Upon termination of this Agreement or expiration of an order, Customer must discontinue using the Univa Software, de-install it and destroy or return the Univa Software and all copies, within 5 days. Upon Univa's request, Customer will provide written certification of such compliance.

8. LIMITATION OF LIABILITY AND DISCLAIMER OF DAMAGES. IN NO EVENT WILL UNIVA BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, EXEMPLARY, PUNITIVE, TREBLE, OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOSS OF BUSINESS, REVENUE, PROFITS, GOODWILL, DATA, OR ECONOMIC ADVANTAGE, AND COSTS OF SUBSTITUTE GOODS OR SERVICES) ARISING OUT OF OR RELATING TO THIS AGREEMENT, HOWEVER CAUSED, AND BASED ON ANY THEORY OF LIABILITY, WHETHER FOR BREACH OF CONTRACT, BREACH OF WARRANTY, TORT (INCLUDING NEGLIGENCE), PRODUCT LIABILITY, OR OTHERWISE, EVEN IF CUSTOMER IS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. EXCEPT FOR CUSTOMER'S PAYMENT OBLIGATIONS, UNIVA'S TOTAL LIABILITY (INCLUDING ATTORNEYS' FEES) ARISING OUT OF OR RELATED TO THIS AGREEMENT WILL NOT EXCEED THE AMOUNT PAID BY CUSTOMER UNDER THE QUOTATION GIVING RISE TO THE CLAIM DURING THE 12-MONTH PERIOD PRIOR TO THE DATE THE CLAIM AROSE. THESE LIMITATIONS WILL APPLY NOTWITHSTANDING ANY FAILURE OF THE ESSENTIAL PURPOSE OF ANY LIMITED OR EXCLUSIVE REMEDY.

9. INTELLECTUAL PROPERTY INDEMNITY. If a third party claims that the Univa Software infringes that party's patent, copyright or other intellectual property right, then Univa will defend Customer against that claim at Univa's expense and pay all costs, damages, and attorney's fees, that a court finally awards or that are included in a settlement approved by Univa, provided that Customer: (a) promptly notifies Univa in writing of the claim; and (b) allows Univa to control, and cooperates with Univa in, the defense and any related settlement.

If Univa receives information about an infringement claim related to the Univa Software, then Univa will at its discretion and at no cost to Customer obtain a license to enable Customer to continue to use the Univa Software or modify the Univa Software so that it is no longer infringing.

If Univa determines that these alternatives are not reasonably available, Univa may terminate the license to the Univa Software and refund any unused fees. Univa's obligations above do not apply if the infringement claim is based on Customer's breach of this Agreement, the use of the Univa Software in combination with products not supplied or approved by Univa in writing, or Customer's failure to use any updates made available by Univa.

This section contains Customer's exclusive remedies and Univa's sole liability for infringement claims.

10. GOVERNING LAW AND EXCLUSIVE FORUM. This Agreement is governed by the laws of the State of Illinois, without regard to conflict of law principles. Any dispute arising out of or related to this Agreement may only be brought in the state of Illinois. Customer consents to the personal jurisdiction of such courts and waives any claim that it is an inconvenient forum. The prevailing party in litigation is entitled to recover its attorneys' fees and costs from the other party.

11. MISCELLANEOUS. (a) Inspection. Upon request by Univa, Customer must provide a usage report at least 60 days before the renewal anniversary. Univa, or its representative, may audit Customer's use of the Univa Software at any Customer facility. Customer will cooperate with such audit. Customer agrees to pay within 30 days of written notification any fees applicable to Customer's use of the Univa Software in excess of the license.

(b) Entire Agreement and all Quotations referencing this agreement (collectively, the "Agreement"), constitutes the entire agreement between the parties, and supersedes all prior or contemporaneous negotiations, representations or agreements, whether oral or written, related to this subject matter.

(c) Modification Only in Writing. No modification or waiver of any term of this Agreement is effective unless signed by both parties.

(d) Non-Assignment. Neither party may assign or transfer this Agreement to a third party, except that the Agreement may be assigned upon notice as part of a merger, or sale of all or substantially all of the business or assets, of a party.

(e) Export Compliance. Customer must comply with all applicable export control laws of the United States, foreign jurisdictions and other applicable laws and regulations.

(f) US Government Restricted Rights. Univa provides the Univa Software, including related data and technology, for ultimate federal government end use solely in accordance with the following: The government hereby
Navops Launch migrates workloads to the cloud, allowing enterprises to control spending, automate applications and manage data placement by selecting and deploying cloud resources. By leveraging five key categories of metrics - cloud cost, resource utilization, queue information, workload consumption and workload characteristics - users get more results faster, and at significantly reduced cost. Navops Launch brings together several products and services into an integrated system:

- **Univa Grid Engine** (workload management)
- **SLURM** (optional workload management)
- **Tortuga** (cloud framework)
- **Unisight** (data collection, reporting, and automation applets for managing cloud resources)
- A **Navops Launch** web interface for cloud spend, rightsizing, automation and correlating application workload to cloud
- **Pay for authentication/authorization via OAuth2 and OpenID**
- **Pre-built cloud images to simplify installation**

Navops Launch is designed for the following use cases:

- Providing additional capacity to on-premise Univa Grid Engine clusters by bursting to the cloud.
- Creating and managing cloud-only installation of Univa Grid Engine or SLURM clusters.
- Managing cloud spend and efficiency.
- Automating application and data placement into the cloud.
- Correlating cloud resource utilization with application workload consumption and characteristics.

Navops Launch currently supports **Amazon Web Services**, **Microsoft Azure** and **Google Cloud Platform** as cloud providers.

### SOFTWARE COMPATIBILITY

Navops Launch undergoes a comprehensive test suite prior to release. During the test suite certain versions of software are thoroughly tested while others receive more limited testing. The following sections outline the fully tested as well as supported operating systems and scheduler versions.

### SUPPORTED OPERATING SYSTEMS

The following table lists the officially supported and fully tested operating systems for Navops Launch:

<table>
<thead>
<tr>
<th>Cloud Server Role</th>
<th>RHEL/CentOS 7.6</th>
<th>RHEL / CentOS 7.7</th>
<th>RHEL / CentOS 7.8</th>
<th>Ubuntu 18.04</th>
<th>Amazon Linux 2 on AWS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installer</td>
<td>Supported</td>
<td>Fully Tested</td>
<td>Supported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UGE Qmaster</td>
<td>Supported</td>
<td>Fully Tested</td>
<td>Supported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UGE Execution</td>
<td>Supported</td>
<td>Fully Tested</td>
<td>Supported</td>
<td>Fully Tested</td>
<td>Fully Tested</td>
</tr>
<tr>
<td>SLURM</td>
<td>Supported</td>
<td>Fully Tested</td>
<td>Supported</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SUPPORTED VERSIONS OF UNIVA GRID ENGINE

- Version 8.6.8 - Officially supported
- Version 8.6.9 - Officially supported
- Version 8.6.10 - Officially supported and fully tested
- Version 8.6.11 - Officially supported
- Version 8.6.12 - Officially supported

As additional releases of Univa Grid Engine are released they will be supported as long as the version of Navops Launch 2.x is supported.

### SUPPORTED VERSIONS OF SLURM

- Version 17.11.12 - Officially supported and fully tested

### KNOWN ISSUES

- Navops Launch should have a static public IP address. Most cloud providers provide dynamic public IP addresses by default, and this IP address will most likely change if Navops Launch is stopped and restarted. It is currently very difficult to change the IP address of the Navops Launch management server once it has been installed, and thus it is recommended that IP address never change. Consult the cloud provider documentation to understand how to create VM instances with a static public IP address.
- Navops Launch needs to be able to connect to port 8333 on its public IP address, otherwise the web service will not be able to start. When setting up a new network in the cloud, make sure the appropriate security/firewall rules are set to enable this. The list of network ports which need to be open is listed in the [Navops Launch Documentation](link only available in HTML version of documentation).
- Univa Grid Engine requires selinux to be in permissive mode to guarantee proper job operations. All machines with Univa Grid Engine components installed will have selinux, if available, set to permissive mode.
- Removing an advanced configuration setting on a cluster in the web UI will not remove the setting from the underlying Tortuga cluster profile. Removing the setting from the cluster profile must be done manually using the Tortuga uge-cluster command line utility.
- When analyzing spend data Navops Launch supports spend filtering and grouping by Cloud Provider tags or labels. While Google Cloud Platform and
Microsoft Azure integrate all Cloud Server tags in their billing data Amazon Web Services requires you to configure Cost Allocation Tags in order to publish tags into spend data. In order for AWS instance tags to be made available to Navops Launch they must be added to your billing account as Cost Allocation Tags:

- Deleting a Slurm cluster must be done in multiple steps: 1) Delete all compute nodes, but leave the master/head node running. 2) Delete the master/head node. 3) Delete the cluster. It is important to wait for all background processing to finish completely between each step.

- The Univa Grid Engine qmaster component is currently only supported on CentOS/RHEL images.

- Time spent when using the UI to create new automations that have optional test field parameters it is required to enter a value and then clear it in order to pass the UI's validation logic.

- Navops Launch interacts heavily with cloud provider APIs and can run into throttling limits in busy accounts. A noticeable throttle can be occasionally seen when calling the pricing API in AWS as it pulls a significant amount of data to create the initial pricing database. If it appears that Navops Launch data is out of date the presence of throttling can be verified via journalctl -u navops-launch-controller and searching for Throttling.

- When encountering issues creating scale sets in Azure due to authentication issues or general API failure a scale set can be created in launch that is unbound and cannot be deleted with the normal tortuga commands. There is no harm in having this scale set remain. Contact Univa Support if you need to have this scale set deleted.

- When running a highly scalable cluster in AWS terminating the scale set while running UGE jobs may leave some queue instances in an orphaned state. If this is observed the orphaned state can be cleared by manually deleting the jobs that were running on the queue instance prior to its termination.

### CHANGE LOG

**NAVOPS LAUNCH V2.1.0**

**May 07, 2020**

- Addition of Slurm as a fully functional Cluster Type for Navops Launch.
  - In Cloud Slurm clusters are supported
  - Slurm clusters support node Data Migration
  - Support for Slurm version 17.11.12

  - Image building for large clusters and scale sets
  - Virtual machine image creation using packer
  - Supports AWS, Azure and GCP

- New provisioning mode optimized dynamic for High Scale Clusters.
  - Fast, Imaged based provisioning of clusters up to 10,000 virtual machines.
  - Improved Automation Engine and variable handling.
  - Additional Automation Examples.

### ISSUES

- navops-launch-655: Create a Navops Launch Kit Component for the Image Builder
- navops-launch-656: Create a Navops Launch Kit Component for the NATS Server
- navops-launch-657: Implement Slurm backend data for Usage Widget
- navops-launch-658: Create an Agent for Highly Scalable Clusters
- navops-launch-659: Create New Tortuga v2 API Endpoints for Node Management
- navops-launch-660: Create New Unisight API Endpoints for Plugin Management
- navops-launch-661: store the completed and failed jobs
- navops-launch-662: store running and waiting jobs for SLURM
- navops-launch-663: Use FQDN in slurm cluster
- navops-launch-669: Create Navops Launch Kit Component(s) for the Agent and Plugins
- navops-launch-670: Implement Execd Agent Plugin
- navops-launch-671: Update unisight to version 4.5.0
- navops-launch-672: Update automation SDK to support creating conditions using variables
- navops-launch-673: Verify unisight kit for template schema changes
- navops-launch-674: Implement the Agent Qmaster Plugin
- navops-launch-675: Full-system Testing
- navops-launch-676: Create an Agent Environment Variable File on First Boot of a New Cloud Server
- navops-launch-677: Implement Controller Processes to Use New Tortuga API Endpoints for Node Management
- navops-launch-678: Fix Code That Uses GCE Deprecated Endpoints
- navops-launch-679: Implement Slurm backend data for Usage drill down Widget
- navops-launch-680: Implement Slurm backend data for slot drill down Widget
- navops-launch-681: Add the bulk rollups / ETL to implement the slots widget.
- navops-launch-682: Implement Slurm backend data for Spend Widget
- navops-launch-683: Implement Slurm backend data for Efficiency Widget
- navops-launch-684: Implement Slurm backend data for License Widget
- navops-launch-685: Implement Slurm web service controller
- navops-launch-686: Handle Slurm cluster type in navops controller
- navops-launch-687: Add Slurm into NL demo environment
- navops-launch-epics-stories-117: Waiting Jobs Table/Diallog Behavioural Testing
- navops-launch-epics-stories-123: Testing - Automation Helpers Integration
- navops-launch-epics-stories-125: Cloud Connectors Tables Integration Testing
- navops-launch-epics-stories-140: Tags Dialog Integration Test
- navops-launch-epics-stories-141: EfficiencySlots and Usage Widgets Integration Testing
- navops-launch-epics-stories-144: Tables Testing Improvement
- navops-launch-epics-stories-151: Inconsistent error message on automation create vs edit when user parameters are not entered
- navops-launch-epics-stories-157: Navops Launch 2.1 - sprint1 - Create new cloud connector profile has strange behaviour
- launch-webui-v2-433: update usage state chart to work with changed launchInventoryUsageStateCount query result set
- launch-webui-v2-439: As a user I expect the compute table components to function as outlined in documentation
- launch-webui-v2-440: Improve test coverage for components/jobs
- launch-webui-v2-441: Improve test coverage for components/layout
- launch-webui-v2-442: Improve test coverage for components/selection
- launch-webui-v2-443: As a user I expect the table inventory to function as outlined in documentation
- launch-webui-v2-445: Integrate Google Puppeteer With Testing
- launch-webui-v2-459: Automations Dialog Crash
- navops-documentation-16: SLURM Documentation Updates
- kit-data-migration-24: Slurm: integrate job submission lua plugin into kit
- tortuga-kit-gceadapter-builder-1: Rename GCE resource adapter from "gce" to "GCP" to match Controller
navops-launch-664: Update Unisphere kit to add Slurm cluster types
navops-launch-664: Improve Slurm nodes provisioning time
navops-launch-669: Port PCI GCP functionality to AWS and Azure
navops-launch-29m: partial support for slurm
navops-launch-30m: enable software components
navops-launch-31m: configure slurm reporting
navops-launch-32m: Add scalable cluster
navops-launch-33m: Rename CCE resource adapter to GCP
navops-launch-34m: More branch customization
navops-launch-35m: Fix azure demo with untagged dev releases
navops-launch-36m: Fixes for SLURM demo in AWS
navops-launch-37m: Make Qmaster cluster profile name consistent for all cloud providers

- navops-launch-epics-stories-91: Scale Clusters Up and Down Quickly
- navops-launch-epics-stories-94: Provide an Accurate Usage Widget Source with SLURM Data
- navops-launch-epics-stories-95: API Interface for Unisphere Plugin Management
- navops-launch-epics-stories-96: Behavioural Testing for Cloud Connector Profile Dialog
- navops-launch-epics-stories-98: Behavioural Testing for Cost Center Table and Dialog
- navops-launch-epics-stories-100: Provide an Accurate Job Widget Source with SLURM Data

- navops-launch-epics-stories-102: Behavioural Testing of Tags Dialog
- navops-launch-epics-stories-103: Provide an Accurate Job drill down Widget Source with SLURM Data

- navops-launch-epics-stories-120: Compute Tables Testing

- navops-launch-epics-stories-304: CCE Adapter should allow service accounts to be specified

- new-issues-101: Navops Launch 2.0 Sprint12: Jobs table page broken when selecting cost-center
- new-issues-385: Support for array parameters in graphqlConditions
- new-issues-533: Controller is missing pricing information for FEM LA Local Zone
- new-issues-535: Error Configuring UserParameter with GraphQL Query Condition
- new-issues-536: Release Notes Improvements
- new-issues-538: Navops Launch Documentation errors and missing parts
- new-issues-540: Navops Launch 2.0 - Compute jobs table missing cluster and cost-center info if the compute node remove right after the job is completed

- new-issues-542: Navops Launch 2.0 - UI Cloud Connector Profile "Inherit Default" button does not work
- new-issues-544: Move replacement of %INSTDIR% in automation templates into rules engine
- new-issues-545: %INSTDIR% does not work for runtime-added action templates as documented
- new-issues-546: Wrong quoting for states in Graphql query example in the simple automation example
- new-issues-548: Google API ENDPOINTS being Deprecated
- new-issues-552: Navops Launch 2.0 - CUI: Suggest to have drop down for Global cluster filtering
- new-issues-553: Navops Launch 2.0 - CUI: Cloud Connector profile created under Profile summary does not show up on drop-down box
- new-issues-558: Navops Launch 2.0 - CUI: Delete multiple cloud-connector-profiles not working
- new-issues-563: Navops Launch 2.1 - sprint1 - image builder in gce does not get network&subnet from cloud-connector-profile
- new-issues-574: Creation of cluster profiles that include startWith report unsuccess
- new-issues-576: Navops Launch 2.1-RC2: unsight failed to install without uge kit
- new-issues-577: Navops Launch 2.1-RC2: edit automation rule, cancel button does not work
- new-issues-579: Navops Launch 2.1-RC2: UGE compute nodes were not added into admin group
- new-issues-583: Navops Launch 2.1-RC2: UI crash when mouse move over slot chart
- new-issues-584: Navops Launch 2.1-RC3: Compute license shows slurm cluster as UGE cluster
- new-issues-585: Navops Launch 2.1-RC3: RealMemory, CPUjac are not configured by slurm kit
- new-issues-587: Navops Launch 2.1-RC3: AWS slurm cluster does not show up in UI
- new-issues-588: Navops Launch 2.1-RC4: Failed to add cloud-server for slurm node
- new-issues-589: Navops Launch 2.1-RC4: Value in usage widget wrongly reports when switching back and forth between Compute-home and Compute-Efficiency
- new-issues-590: Navops Launch 2.1-RC4: Compute>Job>cost shows value higher than total spend of compute nodes of the cluster
- new-issues-596: Hot count in unsight database not accurate all the times
- new-issues-597: Slurm compute nodes in drain state after deleting compute node from UI
- new-issues-601: Compute Licenses Widget Displays Slurm Cluster Cloud Servers as UGE Licenses
- new-issues-602: Navops Launch 2.0: Unsight failing to install at 361
- new-issues-603: Remove "SLURM Pending Jobs Requesting Resource" condition template from unsight kit
- new-issues-604: Navops Launch 2.1-RC3: Compute>jobs running not report number of tasks properly
- new-issues-605: Navops Launch 2.1-RC3: Compute page shows incorrect node status
- new-issues-607: Navops Launch 2.1-RC3-Cloudservers tab does not report CPU
- new-issues-608: Navops Launch 2.1-RC3: Efficiency widget chart error
- new-issues-609: Handle login node type in controller and slurm kit
- new-issues-610: Navops Launch 2.0: navops/startkit puppet module does not conform to naming requirements
- new-issues-611: Navops Launch 2.0: Navops Launch kit requires to non-existing variable
- new-issues-612: Navops Launch 2.0-RC5: Edit slurm cluster advanced shows value not related to slurm
- new-issues-613: Navops Launch 2.0-RC5: AWS RHEL 7.7 - timeouts failed to install, required install
- new-issues-614: Error creating automation with variable in condition when rule name has spaces
- new-issues-615: Pending SLURM array jobs don't show up in UI
- new-issues-617: Navops Launch 2.0-RC5: BCE UI - cloud-connector-profile not update field value when switching tab
- new-issues-618: Navops Launch 2.0-RC6: BCE UI - could not delete cloud-connector-profile from UI
- new-issues-619: Navops Launch 2.0.1: Document for data management in slurm
- new-issues-620: Navops Launch 2.0-RC6: BCE ComputeUsage slot widget reports 125%
- new-issues-625: Navops Launch 2.0-RC7: Wallclock not shown for slurm running jobs
- new-issues-626: Navops Launch 2.0-RC7: Slurmtcld service fail to start at first time
- new-issues-627: Navops Launch 2.0-RC7: Compute>Job Waiting drill down chart shows saw tooth
- new-issues-628: Navops Launch 2.0-RC7: Azure - azure kit failed to install
- new-issues-629: Navops Launch 2.0-RC7: Slurm jobs in failed state are not showing cluster and cost center
- new-issues-631: Navops Launch 2.0-RC7: Slurm cluster - Compute>home node status switching back and forth between in-use and available
- new-issues-641: Navops Launch 2.0-RC7: Slurm Partition selection button are saved as string causing graphql error
- new-issues-643: Change type for Slurm Partition overSubscribe field
- new-issues-644: Unable to start graphql on a server with IPv6 Completely disabled
- new-issues-645: Navops Launch 2.0-RC8: Create cost center doesn't show update table listing upon success
- new-issues-637: Navops Launch 2.0-RC8: Dashboard get out of sync over time
- new-issues-639: Compute usage CPU seconds table column is not showing values for Slurm jobs requesting cpu resource
- new-issues-643: Navops Launch 2.1-UI Create cluster - switching cluster-specification not update proper cluster-profile-specification
- new-issues-644: Navops Launch 2.1-RC1: Compute>License>Launch - Licenses use value always shows 0
- new-issues-645: Navops Launch 2.1-RC1: Compute>Jobs>Waiting crash with array job waiting
- new-issues-647: Navops Launch 2.1-RC1: Document - missing information to configure general resource and partition for slurm
- new-issues-649: Navops Launch 2.1-RC1: uge qmaster failed to install with Amazon Linux 2
- new-issues-650: Navops Launch 2.1-RC1: AWS backend failed to add a qmaster node
- new-issues-651: Navops Launch 2.1-RC1: Slurm - not able to populate resource and partition to slurm node

OTHER ISSUES

- CHANGE LOG

Navops Launch Release Notes
Copyright Univa 2020, All Rights Reserved
Page 7 of 11
- new-issues-652: Navops Launch 2.1-RC1: image builder support general use (without highly scalability) for UGE and slurm clusters
- new-issues-655: Navops Launch 2.1-RC3: Create new cluster, switching between cluster specification crash UI
- new-issues-656: Navops Launch 2.1-RC1: slurmctl failed to install when Installer in RH9/L7
- new-issues-658: Navops Launch 2.1-RC: uge node created via image-builder scale set does not have tortuga complex setup
- new-issues-662: Navops Launch 2.1-RC1: slurm node negative real Memory causes undefined value in compute usage table
- new-issues-666: Navops Launch 2.1-RC3: Adding new cluster profile reset the custom advance setting of cluster
- new-issues-667: Navops Launch 2.1-RC3: Adding cluster-profile remove tags from other software-profiles
- new-issues-668: Navops Launch 2.1-RC4: Compute: Missing slot widget
- new-issues-669: Navops Launch 2.1-RC4: UI: Compute/Usage incorrect cores value next to drill-down chart
- new-issues-670: Navops Launch 2.1-RC4: Not able to delete slurm cluster from UI
- new-issues-671: Navops Launch 2.1-RC4: Compute/License-CPU: Paging show wrong paging
- new-issues-672: Navops Launch 2.1-RC4: Compute/efficiency: cpu efficiency more than 100%
- new-issues-673: Navops Launch 2.1-RC4: slurm always reports core per socket
- new-issues-674: Navops Launch 2.1-RC4: Not able to create slurmld with image-builder
- new-issues-675: Adding 3rd value to cluster advanced settings does not show in UI, but is set at CLI
- new-issues-677: Navops Launch 2.1-RC1: UI - Create cluster, switch to Advance tab - UGE - clean up what have been selected in Manage Cloud Server
- new-issues-678: Navops Launch 2.1-RC4: Highly scale cluster in AWS - tags are not applied on exed node created via scale-set+builder-image
- new-issues-679: Navops Launch 2.1-RC4: AWS - highly scale cluster: required to manually restart navops-launch-agent.service service on qmaster to register execed nodes
- new-issues-680: Navops Launch 2.1-RC4: Compute/Efficiency: Percentage Efficiency next to chart always show 0%
- new-issues-681: Navops Launch 2.1-RC4: TP_SlurmNode collection is missing jobCount attribute
- new-issues-685: Navops Launch 2.1-RC5: UI stops report job after running in couple hours with around 10k waiting jobs
- new-issues-686: Navops Launch 2.1-RC5: UI - Edit cluster, new cluster profile not show up, required web-browser refresh
- new-issues-691: Navops Launch 2.1-RC6: Cannot submit slurm job requesting resource type and name
- new-issues-692: Navops Launch 2.1-RC6: Not able to add slurmctl node
- new-issues-695: Navops Launch 2.1-RC6: GCP - ugeest failed to start with centos8
- new-issues-696: Navops Launch 2.1-RC6: Not able to delete UGE cluster and cause UGErest service failed to install on UGE cluster created after that
- new-issues-699: Alert Table handle large data-sets
- new-issues-701: Navops Launch 2.1-RC6: GCE - builder image failed to run with ubuntu-18
- new-issues-707: Navops Launch 2.1-RC7: exception in slurm reporting log file
- new-issues-708: Navops Launch 2.1-RC7: Slurm cluster - ComputeJobs report much more less pending jobs than actual
- new-issues-709: Navops Launch 2.1-RC7: Builder Image in GCP: Compute node of normal UGE created via builder image + scale-set does not have exed running
- new-issues-710: Navops Launch 2.1-RC7: Azure - graphql pricing API does not work
- new-issues-711: Navops Launch 2.1-RC7: Azure environment Slurmctl failed to install
- new-issues-717: SLURM Launch Efficiency Error: Occasionally Calculates Historical Usage
- new-issues-724: Navops Launch 2.1-RC7: UGE highly scale - cloud & tortuga resource are not added to all highly scale compute instance
- new-issues-725: Navops Launch 2.1-RC8: AWS image builder does not work with ubuntu as documented
- new-issues-731: Adding 'bug' Template
- kit-navops-launch-29: Password for NATs Server
- kit-navops-launch-151: Navops launch issues 656 - Create Navops Launch Kit Component for the NATs Server
- kit-navops-launch-152: Add image builder component
- kit-navops-launch-153: Fix for daemon-reload
- kit-navops-launch-155: Agent component
- kit-navops-launch-157: Adds nat urls config for qmaster
- kit-navops-launch-158: Fix for class defined
- kit-navops-launch-160: Fix dependencies
- kit-navops-launch-161: Add nat token authentication for the server
- kit-navops-launch-162: Use Custom CCE fact when factor can't use gce metadata
- kit-navops-launch-164: Make build machine image work on AWS
- kit-navops-launch-165: image_builder: add ability to pass custom vars
- kit-navops-launch-166: Image builder add azure
- kit-navops-launch-167: imagebuilder: doc fixes
- kit-navops-launch-168: Rename CCE adapter to GCP
- kit-navops-launch-170: Fix controller apply_config resource declaration
- kit-navops-launch-171: Add MANPATH for navops launch
- kit-navops-launch-172: Fix check on possibly undefined variable
- kit-navops-launch-173: image_builder: doc updates
- kit-navops-launch-175: Make image builder work for "normal" UGE cluster profiles and cluster profiles without a DRM
- kit-navops-launch-176: Add version to web UI runtimeconfig
- kit-navops-launch-177: account for extra string length
- kit-navops-launch-178: Restart agent when profileless changes
- kit-navops-launch-179: Bump version number in preparation for release
- kit-navops-launch-180: Allow controller UI secret to be modified
- kit-navops-launch-181: Azure has changed their billing fields
- kit-navops-launch-182: Image builder fixes
- kit-navops-launch-183: Image builder updates
- kit-navops-launch-184: Fix redirects from Navops Launch controller API
- kit-navops-launch-185: Fix image builder issue with multiple subnets in resource group
- launch-migrator-3m: Update gitlab-ci-yml
- automation-sdk-26m: Fix variable quoting in GraphQL query example
- automation-sdk-28m: Make sure to set variables in graphql
- automation-sdk-29m: Add Smart Scale Action and Corresponding Templates
- automation-sdk-30m: Template examples using instdir
- automation-sdk-31m: Update gitlab-ci-yml
- controller-141: Use scheduler and log from api-framework
- controller-142: Update swagger to fix tool regression
- controller-143: initial implementation of cloud server actions
- controller-145: Added basic Slurm support
- controller-146: GCP/CEE prefix fix
- controller-147: Better error handling for async tasks
- controller-148: Add entry for new AWS Local Zone in LA
- controller-149: Re-name CCE resource adapter to GCP
- controller-150: Added slurm login software profile type
- controller-151: Handle Slurm memory and cpus
- controller-152: reverted a change breaking validation, introduced helper function
- controller-153: check for cloud connector profile group not to be set
- controller-155: Fix swp tags in cluster update
- controller-156: Handle cases where projects can’t read zones
- controller-157: handle custom machine type
- controller-158: Properly handle GCP and ignore bad nodes
- controller-159: Update gitlab-ci-yml
- controller-160: Kaniko for building images
- launch-webui-v2-447: Setup multi-select for deletion on cloud connectors / profile group table
- launch-webui-v2-448: Setup multi-select for deletion on compute usage table
- launch-webui-v2-449: Setup multi-select for deletion on compute spend table
- launch-webui-v2-450: Setup multi-select for deletion on compute efficiency tables
- launch-webui-v2-451: Setup multi-select for deletion on compute licenses table
- launch-webui-v2-452: Setup multi-select for deletion on compute slots table
- launch-webui-v2-453: Setup multi-select for deletion on compute jobs table
- launch-webui-v2-454: Setup multi-select for deletion on inventory cost centers table
- launch-webui-v2-455: Setup multi-select for deletion on inventory clusters table
- launch-webui-v2-456: Setup multi-select for deletion on inventory tags table
- launch-webui-v2-457: Setup multi-select for deletion on inventory all table
- launch-webui-v2-458: Cloud Connector > Profile Groups Table Crash
- launch-webui-v2-460: Routes Compute licenses test coverage improvements
- launch-webui-v2-461: Hide Inventory All three-dot actions
- launch-webui-v2-464: Handle NaN for Slots Widget
- launch-webui-v2-466: Add version number to bottom of profile menu
- launch-webui-v2-583m: Replace partial with exact matching in compute-eff. cluster filtration
- launch-webui-v2-587m: Update tristate component logic, change toggle to tristate
- launch-webui-v2-589m: Fix column name for sort function to work
- launch-webui-v2-591m: Add default placeholder label in automations
- launch-webui-v2-593m: Update 552 global cluster dropdown
- launch-webui-v2-595m: Test setup 2
- launch-webui-v2-596m: Reload page to avoid popup and redirect to login
- launch-webui-v2-597m: Automation refresh fix
- launch-webui-v2-598m: Setup delete multiple for cloud connector profile table
- launch-webui-v2-599m: Bug 553 cloud connector profile create population
- launch-webui-v2-601m: Setup error handling for action/condition fields
- launch-webui-v2-604m: Fix single delete action bug/hookup multi-delete for profile groups
- launch-webui-v2-607m: Update to new graphQL structure
- launch-webui-v2-610m: Compute usage multi select actions
- launch-webui-v2-611m: Fix breaking change in other component - add case handler for component
- launch-webui-v2-612m: Compute efficiency multi select
- launch-webui-v2-613m: Fix compute usage chart
- launch-webui-v2-614m: Include global cluster filtration into dropdown select
- launch-webui-v2-615m: Add condition to stop loop in connector profile dialogs
- launch-webui-v2-616m: Update 652 compute slots multi select
- launch-webui-v2-617m: Update 655 inventory clusters multi select
- launch-webui-v2-618m: Add clusterid to query for table filter
- launch-webui-v2-619m: Hide inventory all actions
- launch-webui-v2-621m: Cancel click fix
- launch-webui-v2-622m: Bug 566 automation error message
- launch-webui-v2-624m: Update for default state fallback as 'unknown'
- launch-webui-v2-626m: Add missing variables for filtration in inventory > all table
- launch-webui-v2-627m: Bug 579 automation action crash
- launch-webui-v2-628m: Fix variable names to resolve template list issue
- launch-webui-v2-629m: Update condition template variable logic to filter templates
- launch-webui-v2-630m: Bug 578 automation restrict to
- launch-webui-v2-631m: Able to delete cloudconnectorprofiles, three-dots & multi
- launch-webui-v2-632m: Turns NaN into 0 for percentage total
- launch-webui-v2-634m: Cloud connector profile tab switch data consistency
- launch-webui-v2-635m: Fix discrepancy between refresh time of tabs and tables
- launch-webui-v2-636m: Update allHosts query
- launch-webui-v2-637m: Remove unused value if returning a negative number
- launch-webui-v2-638m: Sync up pollIntervals between charts and tables
- launch-webui-v2-639m: Refresh on success, add status column
- launch-webui-v2-641m: Widget data fetch policy
- launch-webui-v2-642m: Fix cluster dialog left info, error cleanup
- launch-webui-v2-643m: Bug 646 edit cluster advanced
- launch-webui-v2-645m: Bug 644 slurm licenses number
- launch-webui-v2-646m: Show version number in dropdown
- launch-webui-v2-647m: Reset specs on change
- launch-webui-v2-648m: Fix profile delete
- launch-webui-v2-651m: Clear all settings on dialog launch to ensure refresh of right settings
- launch-webui-v2-652m: Fix query for gpu licenses to include metadata
- launch-webui-v2-654m: Maintain clusterprof state/refetch new profiles on launch/fx tests
- launch-webui-v2-656m: Setup refresh on success, listening
- launch-webui-v2-657m: Remove missed check from query
- launch-webui-v2-662m: Update .gitlab-ci.yml
- launch-webui-v2-663m: Refactor csv download, fix table slowing issue
- launch-webui-v2-665m: Add timestamp to csv filename
- launch-webui-v2-670m: Re-factor API handling to properly handle async operations
- navops-documentation-17: Man page for Agent
- navops-documentation-39m: Condition templates using variables
- navops-documentation-40m: Initial documentation for scalability optimized clusters
- navops-documentation-41m: Add agent man page and include man pages in build
- navops-documentation-42m: updates to reflect Slurm related current product status
- navops-documentation-43m: Update documentation to reflect renaming of gce -> CCP
- navops-documentation-44m: Add info on highly-scalable clusters in Azure
- navops-documentation-45m: Add TOC levels and nats token option
- navops-documentation-46m: Add man page for build-machine-image
- navops-documentation-47m: Slurm partitions and Gres documentation
- navops-documentation-48m: Add example for scalability-optimized cluster in AWS
- navops-documentation-49m: Update image builder man page
- navops-documentation-50m: Fix usage of gce -> CCP in scalable clusters docs
- navops-documentation-51m: Add documentation for running Slurm on RHEL
- navops-documentation-52m: Release notes 2.1
- navops-documentation-53m: Add known-issues for deleting Slurm clusters
- navops-documentation-54m: Disable DEBUG log level for slurm
- navops-documentation-55m: Add docs on viewing scalable instances in web UI
- navops-documentation-56m: Explicitly format the auto-ip image
- navops-documentation-58m: Add trigger step for navops launch kit
- navops-documentation-59m: Update release notes known issues
- navops-documentation-60m: Automatically generate release notes
- navops-documentation-61m: Update image builder man page
- navops-documentation-62m: Update .gitlab-ci.yml
- navops-documentation-63m: updated command name to manage-automation-templates in applet-creation doc
- navops-documentation-64m: Update image builder man page
- navops-documentation-65m: Fix image builder example for Ubuntu
- navops-documentation-66m: Fix image builder man page formatting
- navops-documentation-67m: Very minor update to image builder man page
- navops-steps-4: Update .gitlab-ci.yml
- navops-steps-45m: Kaniko

Copyright Univa 2020, All Rights Reserved
Changes to the Unisight kit:

- Tortuga upgraded to version 7.0.3, which includes the following changes:
  - Added support for GCP as a cloud provider
  - AWS Auto Scaling Group, GCP Autoscaling Instance Groups and Azure Scale Sets.
  - AWS spot fleet support.
  - Support for Hybrid cloud with Amazon Web Services (AWS), Google Cloud Platform (GCP) and Microsoft Azure (Azure).
  - GraphQL API for cluster and cloud data.
  - Dex
  - New flexible cloud and Univa Grid Engine cluster tagging for cloud servers and jobs running in the cloud.
  - Cloud cost centers for tracking cloud usage and spend for projects, departments and organizations.
  - Data migration to the cloud for jobs submitted in Univa Grid Engine.
  - New automation engine for creation of automation applets using filters, expressions and actions.
  - Graphing and tracking of cloud spend and efficiency.
  - New Navops Launch web UI for cloud bursting and clusters in the cloud.

- Commands
  - tortuga-kit-slurm-33m
  - tortuga-kit-awsadapter-212m
  - tortuga-kit-awsadapter-builder-1
  - tortuga-615m
  - tortuga-614m
  - tortuga-609m
  - univa-kit-unisight-125m
  - univa-kit-unisight-124m
  - univa-kit-unisight-122m
  - univa-kit-unisight-120m
  - univa-kit-unisight-119m
  - univa-kit-unisight-118m
  - univa-kit-unisight-117m
  - univa-kit-unisight-116m
  - univa-kit-unisight-115m
  - univa-kit-unisight-114m
  - univa-kit-unisight-113m
  - univa-kit-unisight-112m
  - univa-kit-unisight-111m
  - univa-kit-unisight-110m
  - univa-kit-unisight-109m
  - univa-kit-unisight-108m
  - univa-kit-unisight-107m
  - univa-kit-unisight-106m
  - univa-kit-unisight-105m
  - univa-kit-unisight-104m
  - univa-kit-unisight-103m
  - univa-kit-unisight-102m
  - univa-kit-unisight-101m
  - univa-kit-unisight-100m
  - univa-kit-unisight-99m
  - univa-kit-unisight-98m
  - univa-kit-unisight-97m
  - univa-kit-unisight-96m
  - univa-kit-unisight-95m
  - univa-kit-unisight-94m
  - univa-kit-unisight-93m
  - univa-kit-unisight-92m
  - univa-kit-unisight-91m
  - univa-kit-unisight-90m
  - univa-kit-unisight-89m
  - univa-kit-unisight-88m
  - univa-kit-unisight-87m
  - univa-kit-unisight-86m
  - univa-kit-unisight-85m
  - univa-kit-unisight-84m
  - univa-kit-unisight-83m
  - univa-kit-unisight-82m
  - univa-kit-unisight-81m
  - univa-kit-unisight-80m
  - univa-kit-unisight-79m
  - univa-kit-unisight-78m
  - univa-kit-unisight-77m
  - univa-kit-unisight-76m
  - univa-kit-unisight-75m
  - univa-kit-unisight-74m
  - univa-kit-unisight-73m
  - univa-kit-unisight-72m
  - univa-kit-unisight-71m
  - univa-kit-unisight-70m
  - univa-kit-unisight-69m
  - univa-kit-unisight-68m
  - univa-kit-unisight-67m
  - univa-kit-unisight-66m
  - univa-kit-unisight-65m
  - univa-kit-unisight-64m
  - univa-kit-unisight-63m
  - univa-kit-unisight-62m
  - univa-kit-unisight-61m
  - univa-kit-unisight-60m
  - univa-kit-unisight-59m
  - univa-kit-unisight-58m
  - univa-kit-unisight-57m
  - univa-kit-unisight-56m
  - univa-kit-unisight-55m
  - univa-kit-unisight-54m
  - univa-kit-unisight-53m
  - univa-kit-unisight-52m
  - univa-kit-unisight-51m
  - univa-kit-unisight-50m
  - univa-kit-unisight-49m
  - univa-kit-unisight-48m
  - univa-kit-unisight-47m
  - univa-kit-unisight-46m
  - univa-kit-unisight-45m
  - univa-kit-unisight-44m
  - univa-kit-unisight-43m
  - univa-kit-unisight-42m
  - univa-kit-unisight-41m
  - univa-kit-unisight-40m
  - univa-kit-unisight-39m
  - univa-kit-unisight-38m
  - univa-kit-unisight-37m
  - univa-kit-unisight-36m
  - univa-kit-unisight-35m
  - univa-kit-unisight-34m
  - univa-kit-unisight-33m
  - univa-kit-unisight-32m
  - univa-kit-unisight-31m
  - univa-kit-unisight-30m
  - univa-kit-unisight-29m
  - univa-kit-unisight-28m
  - univa-kit-unisight-27m
  - univa-kit-unisight-26m
  - univa-kit-unisight-25m
  - univa-kit-unisight-24m
  - univa-kit-unisight-23m
  - univa-kit-unisight-22m
  - univa-kit-unisight-21m
  - univa-kit-unisight-20m
  - univa-kit-unisight-19m
  - univa-kit-unisight-18m
  - univa-kit-unisight-17m
  - univa-kit-unisight-16m
  - univa-kit-unisight-15m
  - univa-kit-unisight-14m
  - univa-kit-unisight-13m
  - univa-kit-unisight-12m
  - univa-kit-unisight-11m
  - univa-kit-unisight-10m
  - univa-kit-unisight-9m
  - univa-kit-unisight-8m
  - univa-kit-unisight-7m
  - univa-kit-unisight-6m
  - univa-kit-unisight-5m
  - univa-kit-unisight-4m
  - univa-kit-unisight-3m
  - univa-kit-unisight-2m
  - univa-kit-unisight-1m
  - univa-kit-unisight-0m
  - univa-kit-unisight-9m
  - univa-kit-unisight-8m
  - univa-kit-unisight-7m
  - univa-kit-unisight-6m
  - univa-kit-unisight-5m
  - univa-kit-unisight-4m
  - univa-kit-unisight-3m
  - univa-kit-unisight-2m
  - univa-kit-unisight-1m
  - univa-kit-unisight-0m

NAVOPS LAUNCH V2.0.0

Jan 24, 2020

- New Navops Launch web UI for cloud bursting and clusters in the cloud.
- Graphing and tracking of cloud spend and efficiency.
- New automation engine for creation of automation applets using filters, expressions and actions.
- Cloud cost centers for tracking cloud usage and spend for projects, departments and organizations.
- Flexible cloud and Univa Grid Engine cluster tagging for cloud servers and jobs running in the cloud.
- New navops-cli command line tool for controlling and managing, cloud connectors, cloud connector profiles, cost centers and cloud servers.
- New documentation.
- Navops Launch Multi-Cloud. Creating one environment spanning multiple cloud providers (Google Cloud Platform, Microsoft Azure and Amazon Web Services).

NAVOPS LAUNCH V1.1.1

May 29, 2019

- Overall documentation improvements and clarifications
- Added support for CCP as a cloud provider
- Improved input validation and error messages in the Web UI:
  - Tortuga connector names and cluster names are now validated using the same naming rules as the back-end (see below)
  - When creating clusters, the number of schedulers is now set to 1 by default, and cannot be changed
- Tortuga upgraded to version 7.0.3, which includes the following changes:
  - Hardware profile and software profile names are now restricted to the following characters: a-zA-Z,0-9, _
  - Software profiles are now set by default to have a maximum of 25 nodes. This maximum can be changed or removed as required via the CLI.
  - Resource adapter setting names are now case insensitive.
  - Initial support added for a future Data Migration kit.
  - The logging namespace has been normalized and refactored.
  - Resource adapter setting names are now case insensitive.
  - Initial support added for a future Data Migration kit.
  - The commands idle-node, activate-node, and transfer-node have been obsoleted and are no longer supported.
  - Fixes, additions, and clarifications to the documentation.
- Changes to the Univa Grid Engine kit:
  - Fixed a bug in the REST API statistics endpoint, which was causing the TensorFlow demo to fail.
  - Improved handling of qmaster-UGE REST disconnects.
  - Cluster names are now restricted to the following characters: a-zA-Z,0-9, _
  - Initial support added for a future Data Migration kit.
  - Nodes in the deleted state are no longer shown in the uge-cluster command.
- Changes to the Unisight kit:
- Fixed issue preventing the Unisight kit from being used outside of Navops Launch.

- AWS resource adapter kit upgraded to version 7.0.3:
  - `setup-aws` now uses the same AMI as the installer, or if not found, asks the user to provide one.
  - Spot instance support has been refactored and improved.
  - The logging namespace has been normalized and refactored.
  - Resource adapter settings help text have been improved.
  - Fixes, additions, and clarifications to the documentation.

- Azure resource adapter kit upgraded to version 7.0.3:
  - The logging namespace has been normalized and refactored
  - Fixes, additions, and clarifications to the documentation

- GCP resource adapter kit upgraded to version 7.0.3:
  - The logging namespace has been normalized and refactored.
  - Fixes, additions, and clarifications to the documentation.

- The Tortuga Upgrader now removes deprecated resource adapter settings during the upgrade process.

**NAVOPS LAUNCH V1.1.0**

**December 21, 2018**

- A Tortuga upgrader, capable of upgrading from Unicloud 6.2.x to Tortuga 7.0.x. For upgrading from earlier versions of Unicloud, please contact Univa support.
- Univa Grid Engine upgraded to version 8.6.4.
- Documentation on how to install custom SSL certificates.
- Tortuga upgraded to version 7.0.2.
- Verified support for Azure and GCP cloud providers.
- Support for performing installations without an internet connection.
- Support for specialized installation scenarios where the Tortuga installer and compute nodes do not have a direct internet connection.
- Documentation updates:
  - Several content and reformating improvements.
  - Tortuga-specific documentation on how to install custom SSL certificates.
- Several minor bugfixes and improvements.

**NAVOPS LAUNCH V1.0.1**

**November 15, 2018**

- Univa Grid Engine upgraded to version 8.6.3.
- Fixed an issue when integrating with existing Univa Grid Engine clusters.
- Fixed broken documentation link in the web UI.
- The `tortuga` CLI will now print the help text by default if the command is incomplete.
- Additional documentation on creating applets.

**NAVOPS LAUNCH V1.0.0**

**October 25, 2018**

- Initial release.