October 2014 Programming Environments Release Announcement for Cray XC Systems

The following product/versions are released:

**Product/Version:**
- **Cray Developer Toolkit 1.20**  
  **CDT 1.20**  
  Click here for changes to CDT products
- **PGI**
  **PGI 14.9.0**
- **DDT**
  **DDT 4.2.1.6_38435**

These packages are available for download from CrayPort at:
http://crayport.cray.com/Pages/default.aspx

**NOTE: CLE versions supported.**
Beginning in June 2014 the PE releases no longer support CLE 4.0, 4.1 and 5.0 releases. CLE 4.0, CLE 4.1 and CLE 5.0 operating systems can continue to run PE products released prior to June 2014.

**NOTE: PGI Compiler Recommendation**
Due to the following bugs, Cray recommends using PGI version 14.2.0.
- 815192 libaccapid.a not in pgi/14.7
- 816070 - pgi 14.3 has no libaccapid.so in libso
- 814037 - pgi/14.4.0, -dynamic, needs libaccapid.so with June PE releases

**NOTE: PGI 14.9.0 does not support Cuda 5.5.**
In addition to the bugs noted above, PGI 14.9.0 is not supported with Cuda 5.5. The following error occurs when using PGI 14.9.0 with Cuda 5.5:
  pgnvd - Error - CUDADIR value is not a directory:  
  /opt/pgi/14.9.0/linux86-64/2014/cuda/5.5/bin.
Cray recommends to only install PGI 14.9.0 as non-default on systems with GPU accelerators.

**NOTE: GCC 4.9 does not support Cuda 5.5.**
GCC 4.9.0 and GCC 4.9.1 are not supported with Cuda 5.5. The Cuda runtime header throws an error when compiling with nvcc. Cray recommends to only install GCC 4.9.0 and GCC 4.9.1 as non-default on systems with GPU accelerators.

**NOTE: Intel Compiler Recommendation**
Due to bug 815130, Cray recommends using version Intel 14.0.2 or later
- 815130 cray-hdf5-parallel gives bad result for integers for version 1.8.13

**NOTE: MPT 7.0 ABI compatibility change.**
An ABI change in the MPT 7.0 release requires all MPI user code compiled with MPT 6.x to be recompiled. Scientific libraries, Performance Tools, Cray Compiling Environment and third party libraries compatible with the new ABI are included in the June and later PE release.
CDT 1.20
CDT 1.20 contains the programming environment for Cray XC series systems except:

- licensed third party products
- PGI, GDB, DDT and Totalview
- Chapel
- Performance tools clients for Windows, Mac and Linux desktop systems
- Flexnet license manager software

**Documentation:**
S-2372-119: Cray Programming Environments Installation Guide

**General Installation Instructions:**
For installations on Cray XC series systems, please see
S-2372-119 is available at [http://docs.cray.com/](http://docs.cray.com/)
For installations on Cray esLogin and Linux white box systems also refer to Installing Cray Linux Environment (CLE) Support Package on esLogin Nodes or Linux Workstations S-2528.

Craype-installer 1.9.02 or later must be used to install with this release.

These products have been updated on this CDT iso:

**Product/Version**
- Cray Compiling Environment 8.3.4
- CCE 8.3.4
- Cray Message Passing Toolkit 7.0.4
- MPT 7.0.4
- snplauncher 7.0.4 (Cray XC series systems only)
- Cray Scientific and math libraries 7.3.2
- Trilinos 11.10.1.0
- TPSL 1.4.2
- Cray Environment Setup and Compiling support 5.45
  - CrayPE 2.2.1
  - Craypkg-gen 1.2.1
- Cray Third party products 5.44
  - HDF5 1.8.13

These products are available for download from CrayPort at:
[http://crayport.cray.com/Pages/default.aspx](http://crayport.cray.com/Pages/default.aspx)

**General Installation Instructions:**
For general installations on Cray XC series systems, please see
S-2372-119 is available at [http://docs.cray.com/](http://docs.cray.com/)
Test Platforms:
These products were tested on:
Cray XC series systems running CLE 5.1 and CLE 5.2.

Compilers for Cray Libraries:
Libraries in this announcement require these minimum compiler versions:
Note: Because these compilers are used to build the libraries, the libraries may not be compatible with object files built with older compilers.
- CCE 8.3.0
- Intel 14.0.1
- Intel 15.0.0
- GNU 4.8 and GNU 4.9
- PGI 14.1.0

Please see specific product release announcements for additional library and compiler dependencies.

Detailed descriptions:

Cray Compiling Environment 8.3.4
CCE 8.3.4
Purpose:
CCE 8.3.4 provides Fortran, C, and C++ compilers for Cray XE, Cray XK and Cray XC series systems.

Bugs Closed with CCE 8.3.4 release:
- 796758 Different results for shared variables for different optimization
- 799279 Internal compiler error mixing CAF and OPENACC
- 813386 Internal compiler error using -h acc
- 814349 Bad code when inlining function SLang_pop in slang.c
- 814892 Auto allocate variable component when parent is not coindexed
- 816503 CCE shows wrong OpenACC version
- 815567 unsafe optimization at scalar1,vector1
- 816057 Compiler Bug - ptx assembly aborted
- 816254 Suspicious bounds checking report with - flex_mp=conservative
- 816259 An Mersenne-twister program compiled with cce does not work properly
- 816941 Internal compiler error - unexpected expression type

Notes and Limitations:
Shared objects (binaries or shared libraries) built with CCE 8.2 (or earlier) are incompatible with those built with CCE 8.3. Mixing shared objects built with CCE 8.2 (or earlier) with those built with CCE 8.3 may encounter missing symbols at runtime.

Dependencies:
The CCE 8.3.4 release is supported on
- Cray XE and Cray XK systems with the CLE 4.2 and CLE 5.2.
- Cray XC series systems with the CLE 5.1 and CLE 5.2
For Cray XE and Cray XK systems the following products are required:
  o Cray Compiler Drivers
    o xt-asyncpe 5.27 or later for systems with CLE 4.2
    o CrayPE 2.1.2 or later for systems with CLE 5.2
    o GNU GCC 4.8.1 must be installed but does not need to be the default GCC
    o Cray Scientific Libraries (LibSci) 13.0.0 or later
    o PMI 5.0.1 or later

For Cray XC30 series systems the following products are required:
  o Cray Compiler Drivers (CrayPE) 2.1.2 or later
  o GNU GCC 4.8.1 must be installed but does not need to be the default GCC
  o Cray Scientific Libraries (LibSci) 13.0.0 or later
  o PMI 5.0.1 or later

The CCE 8.3 release requires the following minimum versions if these products are used:
  o HDF5 1.8.13
  o NETcdf 4.3.2
  o parallel-NETcdf 1.4.1
  o MPT 7.0.0
  o GA 5.1.0.5
  o LibSci_acc 3.0.2
  o TPSL 1.4.1
  o PETSc 3.4.4.0
  o Trilinos 11.8.1.0
  o fftw3 3.3.4.0
  o fftw2 2.1.5.7
  o Perftools 6.2.0
  o Reveal 1.4

**Installation instructions:**
To install the CCE, programming environment:
  rpm -ivh cce-8.3.4-109.x86_64.rpm

To make CCE 8.3.4 the default version of CCE, execute:
  /opt/cray/admin-pe/set_default_files/set_default_cce_8.3.4

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  /opt/cray/cce/8.3.4/ATTRIBUTIONS_8.3.txt

**Cray Message Passing Toolkit 7.0.4**
**MPT 7.0.4**
**Purpose:**

MPI users upgrading from MPT 6.x will need to recompile and relink.

The following features were added to MPT 7.0.4 over MPT 7.0.3:

- A new variable called MPICH_RMA_USE_NETWORK_AMO has been added to allow users to enable the use of network Atomic Memory Operations (AMOs) for selected MPI operations. In some cases, the ability to control when network AMOs are used can improve performance. If MPICH_RMA_OVER_DMAPP is set and MPICH_RMA_USE_NETWORK_AMO is set to 1, network AMOs are used to implement MPI_Accumulate, MPI_Get_accumulate, MPI_Raccumulate, MPI_Rget_accumulate, MPI_Fetch_and_op, and MPI_Compare_and_swap. Alternatively, if MPICH_RMA_OVER_DMAPP is set, MPICH_RMA_USE_NETWORK_AMO can be set to a comma-delimited string of predefined MPI_REDUCE and MPI_REPLACE operations, e.g., MPI_SUM, MPI_BXOR, MPI_MIN. User-defined functions cannot be specified. Performance improvements up to 80% have been observed. See the intro_mpi man page for more information.

- A new environment variable called MPICH_GNI_ROUTING_MODE has been added to allow users to select which routing mode to use for their job on Cray XC series systems. Setting this env variable to one of the supported values will select that routing mode for off-node data transfers made through the uGNI low level interface. See the intro_mpi man page for more information.

- MPI Fine-grained multi-threading support has been added for KNC. Cray MPI has been enhanced to provide improved performance for multi-threaded applications that perform MPI operations within threaded regions. This feature is currently available only for MPI point-to-point and communicator creation/destruction operations. Future releases of Cray-MPI will be expected to offer this feature for a larger subset of MPI operations. This feature requires CrayPE 2.2.0 since it has been initially implemented as a separate library and is automatically pulled in by using the new “-craympich-mt” driver option. Performance improvements up to 90% have been observed on KNC. See the intro_mpi man page for more information.

**The following bugs were fixed since MPT 7.0.3:**

- 815463 Fortran Interface to MPI_Win_allocate_shared does not support MPI_ADDRESS_KIND integers
- Several fixes to supporting scripts and documentation for the MPICH_MPIIO_STATS=2 feature
- Several minor MPI one-sided fixes

**Product and OS Dependencies:**

The Cray MPT 7.0.4 release is supported on the following Cray systems:

- Cray XE and Cray XK systems running CLE 4.2 and CLE 5.2
- Cray XC series systems with CLE version 5.1 or later

**Product and OS Dependencies by network type:**
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<thead>
<tr>
<th></th>
<th>Gemini(XE)</th>
<th>Aries(XC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>xt-asyncpe</td>
<td>&gt;=5.27</td>
<td>N/A</td>
</tr>
<tr>
<td>craype</td>
<td>&gt;=2.1.2</td>
<td>&gt;=2.1.2</td>
</tr>
<tr>
<td>pmi</td>
<td>&gt;=5.0.4</td>
<td>&gt;=5.0.4</td>
</tr>
<tr>
<td>cray-libugni</td>
<td>&gt;=5.0</td>
<td>&gt;=5.0</td>
</tr>
<tr>
<td>cray-libugni-devel</td>
<td>&gt;=5.0</td>
<td>&gt;=5.0</td>
</tr>
<tr>
<td>cray-libudreg</td>
<td>&gt;=2.3.2</td>
<td>&gt;=2.3.2</td>
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<td>cray-libudreg-devel</td>
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<td>&gt;=2.3.2</td>
</tr>
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<td>cray-libxpmem</td>
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<td>&gt;0.1</td>
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<tr>
<td>cray-libxpmem-devel</td>
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<td>&gt;=0.1</td>
</tr>
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<td>&gt;=4.0.1</td>
<td>&gt;=7.0.1</td>
</tr>
<tr>
<td>cray-libdmmapp-devel</td>
<td>&gt;=4.0.1</td>
<td>&gt;=7.0.1</td>
</tr>
<tr>
<td>alps</td>
<td>default</td>
<td>default</td>
</tr>
</tbody>
</table>

One or more compilers:
- CCE 8.3.0 or later
- PGI 14.1.0 or later
- GNU 4.8.0 or later
- Intel 14.0.1 or later
- Intel 15.0.0 or later
- Pathscale 4.0.9 or later

**Documentation:**
For more information see the intro_mpi and intro_shmem man pages.

**Modulefile:**
module load cray-mpich/7.0.4

- The cray-mpich2 modulefile has been deprecated with this release. Please update any site configurations to load the cray-mpich instead of the cray-mpich2 modulefile.

**Installation:**
rpm -ivh cray-mpt-*/-7.0.4-gni2_10372.x86_64.rpm

The "*" in the install command represents compiler version combinations.

To make this the default version, execute:
```
/opt/cray/admin-pe/set_default_files/set_default_mpt_7.0.4
```

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**snplauncher 7.0.4**

**Purpose:**
Single Node Parallel (SNP) Launcher allows a user to launch single node MPI applications on Service MAMU nodes. Please see the CLE documentation for further information about Service MAMU nodes.
Product and OS Dependencies:
The Cray snplauncher 7.0.4 release is supported on the following Cray systems:
  o  Cray XC series systems with CLE version 5.1 UP01 or later (first CLE release to support Service MAMU nodes)

Product and OS Dependencies by network type:

<table>
<thead>
<tr>
<th>Component</th>
<th>Aries(XC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>xt-asyncpe</td>
<td>N/A</td>
</tr>
<tr>
<td>craype</td>
<td>&gt;=2.1.2</td>
</tr>
<tr>
<td>pmi</td>
<td>&gt;=5.0.4</td>
</tr>
<tr>
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<td>&gt;=5.0</td>
</tr>
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<td>cray-libugni-devel</td>
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<td>&gt;=0.1</td>
</tr>
<tr>
<td>cray-libxpmem-devel</td>
<td>&gt;=0.1</td>
</tr>
<tr>
<td>cray-libdmapp</td>
<td>&gt;=7.0.1</td>
</tr>
<tr>
<td>cray-libdmapp-devel</td>
<td>&gt;=7.0.1</td>
</tr>
<tr>
<td>alps</td>
<td>default</td>
</tr>
</tbody>
</table>

One or more compilers:
  o  CCE 8.3.0 or later
  o  PGI 14.1.0 or later
  o  GNU 4.8.0 or later
  o  Intel 14.0.1 or later
  o  Intel 15.0.0 or later

Documentation:
For more information see the mpiexec(1) man page after loading the cray-snplauncher module.

Installation:
rpm -ivh cray-snplauncher-7.0.4-2_10372.x86_64.rpm

The "*" in the install command represents compiler version combinations.

To make this the default version, execute:
/opt/cray/admin-pe/set_default_files/set_default_cray-snplauncher_7.0.4

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Cray Scientific and Math Libraries 7.3.2
Trilinos 11.10.1.0
Purpose:
The Cray Trilinos 11.10.1.0 is equivalent to the official patch release of Trilinos 11.10.1 by Sandia National Laboratories. For further information about the Trilinos 11.10.1 release, see:


The Cray Trilinos 11.10.1.0 release provides the following:

- Trilinos 11.10.1 Update

**Bugs Closed with Cray Trilinos 11.10.1.0 release:**

- 816942 - Trilinos is incorrectly accessing Boost libraries from lib64.

**Product and OS Dependencies:**

The Cray Trilinos 11.10.1.0 release is supported on the following Cray systems:

- Cray XE and Cray XK systems with CLE 4.2 and CLE 5.2.
- Cray XC series systems with CLE 5.1 and CLE 5.2.

The Cray Trilinos 11.10.1.0 release requires the following software products:

For Cray XE and Cray XK systems:

- xt-asynce 5.27 or later / craype 2.1.2 or later
- cray-libsci 13.0.0 or later
- TPSL 1.4.1
- MPT 7.0.0 or later

One or more compilers:

- CCE 8.3.0 or later
- GCC 4.8.0 or later
- GCC 4.9.0 or later
- Intel 14.0.1.106 or later
- Intel 15.0.0.090 or later

For Cray XC series systems:

- craype 2.1.2 or later
- cray-libsci 13.0.0 or later
- TPSL 1.4.1
- MPT 7.0.0 or later

One or more compilers:

- CCE 8.3.0 or later
- GCC 4.8.0 or later
- GCC 4.9.0 or later
- Intel 14.0.1.106 or later
- Intel 15.0.0.090 or later

**Notes and Limitations:**

The Cray Trilinos 11.10.1.0 release is dependent on the new Cray MPI library (MPT 7.0.0) that is binary incompatible with previous Cray MPI libraries. Users will need to recompile with a supported compiler and relink their codes with MPT 7.0.0 and Cray Trilinos 11.10.1.0 to take advantage of new features and benefit from performance optimizations.
**Documentation:**

To see descriptions of each individual Trilinos package, go to [http://trilinos.sandia.gov/capabilities.html](http://trilinos.sandia.gov/capabilities.html)

See the intro_trilinos man page for additional information.

**Modulefile:**
module load cray-trilinos

**Installation instructions:**
rpm -iv cray-trilinos-*-11.10.1.0-1.201409221905.a56164123eb9b.x86_64.rpm

The "*" in the install command represents compiler version combinations.

To make this the default version, execute:
/opt/cray/admin-pe/set_default_files/set_default_trilinos_11.10.1.0

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/opt/cray/trilinos/11.8.1.0/ATTRIBUTIONS_trilinos11.10.1.0.txt

**TPSL 1.4.2**

**Purpose:**
The TPSL 1.4.2 release is supported on Cray XE, Cray XK, and XC series systems. TPSL is supported on the host CPU but not on the accelerator of Cray XK systems.

**Bugs Closed with Cray TPSL 1.4.2 release:**
- 816202 module cray-tpsl/1.4.1 missing needed FCVODE package

TPSL (Third Party Scientific Libraries) contains a collection of outside mathematical libraries that can be used with PETSc and Trilinos. This module increases the flexibility of PETSc and Trilinos by providing users with multiple options for solving problems in dense and sparse linear algebra. The cray-tpsl module is automatically loaded when PETSc or Trilinos is loaded. The libraries included are MUMPs, SuperLU, SuperLU_dist, ParMetis, Hypre, Sundials, and Scotch.

- MUMPS 4.9.2. MUMPS (MUltifrontal Massively Parallel sparse direct Solver) is a package of parallel, sparse, direct linear-system solvers based on a multifrontal algorithm. MUMPS can now interface with SCOTCH as well.
  For further information, see [http://graal.ens-lyon.fr/MUMPS/](http://graal.ens-lyon.fr/MUMPS/)
- SuperLU 4.3. SuperLU is a sequential version of SuperLU_dist and a sequential incomplete LU preconditioner that can accelerate the convergence of Krylov subspace iterative solvers. For further information, see http://crd.lbl.gov/~xiaoye/SuperLU/

- SuperLU_dist 3.3. SuperLU_dist is a package of parallel, sparse, direct linear-system solvers (available in Cray LibSci). For further information, see http://crd.lbl.gov/~xiaoye/SuperLU/

- ParMETIS 4.0.2. ParMETIS (Parallel Graph Partitioning and Fill-reducing Matrix Ordering) is a library of routines that partition unstructured graphs and meshes and compute fill-reducing orderings of sparse matrices. For further information, see http://glaros.dtc.umn.edu/gkhome/views/metis

- HYPRE 2.9. HYPRE is a library of high-performance preconditioners that use parallel multigrid methods for both structured and unstructured grid problems (not included with petsc-complex). For further information, see http://www.llnl.gov/CASC/linear_solvers/

- SUNDIALS 2.5.0 (SUite of Nonlinear and DIfferential/Algebraic equation Solvers) consists of 5 solvers: CVODE, CVODES, IDA, IDAS, and KINSOL. In addition, SUNDIALS provides a MATLAB interface to CVODES, IDAS, and KINSOL that is called sundialsTB. For further information, see https://computation.llnl.gov/casc/sundials/main.html

- Scotch 6.0. Scotch is a software package and libraries for sequential and parallel graph partitioning, static mapping, sparse matrix block ordering, and sequential mesh and hypergraph partitioning. For further information, see http://www.labri.fr/perso/pelegrin/scotch

**Product and OS Dependencies:**
The Cray TPSL 1.4.2 release is supported on the following Cray systems:
- Cray XE and Cray XK systems with CLE 4.2 and CLE 5.2.
- Cray XC series systems with CLE 5.1 and CLE 5.2.

The Cray TPSL 1.4.2 release requires the following software products:

For Cray XE and Cray XK systems:
- xt-asyncpe 5.27 or later / craype 2.1.2 or later
- cray-libsci 13.0.0 or later
- MPT 7.0.0 or later

One or more compilers:
- CCE 8.3.0 or later
- GCC 4.8.0 or later
- GCC 4.9.0 or later
- Intel 14.0.1.106 or later
- Intel 15.0.0.090 or later
- PGI 14.1.0 or later
For Cray XC series systems:
  - craype 2.1.2 or later
  - cray-libsci 13.0.0 or later
  - MPT 7.0.0 or later

One or more compilers:
  - CCE 8.3.0 or later
  - GCC 4.8.0 or later
  - GCC 4.9.0 or later
  - Intel 14.0.1.106 or later
  - Intel 15.0.0.090 or later

Notes and Limitations:
The PGI 14.3.0 or later compilers are not supported on Cray XE and Cray XK systems with this or previous Cray TPSL releases due to Bug 815192 (libaccapid.a not in pgi/14.7).

Documentation:
http://graal.ens-lyon.fr/MUMPS/
http://crd.lbl.gov/~xiaoye/SuperLU/
http://glaros.dtc.umn.edu/gkhome/views/metis/
http://www.llnl.gov/CASC/linear_solvers/
https://computation.llnl.gov/casc/sundials/main.html
http://www.labri.fr/perso/pelegrin/scotch/

Modulefile:
module load cray-tpsl

Installation instructions:
rpm --iv cray-tpsl-*.1.4.2-1.201409221807.cac5d8ff4c277.x86_64.rpm

The "*" in the install command represents compiler version combinations.

To make this the default version, execute:
  /opt/cray/admin-pe/set_default_files/set_default_tpsl_1.4.2

License:
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  /opt/cray/tpsl/1.4.2/ATTRIBUTIONS_tpsl1.4.2.txt

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Environment Setup and Compiling support 5.45
CrayPE 2.2.1
Purpose:
This is a bug fix release.

**Bugs Closed with this release:**
- 816515 - pg/14.7.0 requires -lnuma
- 817109 - CLE option "-h network" stopped working in CLE 5.2

**Dependencies:**
The CrayPE 2.2.1 release is supported on the following Cray systems:
* Cray XE and Cray XK systems with CLE 5.2.
* Cray XC series systems with CLE 5.1 and CLE 5.2.
* Cray CS300 systems with CentOS 6.4 and Redhat 6.4.

The CrayPE 2.2.1 release is dependent on .pc files in the following software products:
- ATP 1.6.3 or later
- FFTW 3.3.0.4 or later
- FFTW 2.1.5.6 or later
- Global Arrays 5.1.0.2 or later
- HDF5 1.8.11 or later
- iobuf 2.0.5 or later
- LibSci 12.1.01 or later
- MPT 6.0.2 or later
- NetCDF 4.3.0 or later
- Parallel-NetCDF 1.3.1.1 or later
- PMI 4.0.1 or later
- PETSc 3.4.2.0 or later
- Trilinos 11.4.1.0 or later
- TPSL 1.3.04 or later
- TotalView 8.12-totalview-support-1.1.5 or later

**Documentation:**
See manpages for cc, CC, ftn, intro_craype-api, intro_hugepages and pkg-config

See section 2.6 Using Targeting Modules of the Cray Programming Environment User's Guide (S-2529-116)


**Installation instructions:**
rpm -ivh craype-2.2.1-3.201409231538.308090e6d17d6.x86_64.rpm

To make this the default version, execute:
/opt/cray/admin-pe/set_default_files/set_default_craype_2.2.1

**Craypkg-gen 1.2.1**

**Purpose:**
This version of craypkg-gen sources Intel setup script to generate the Intel modulefile.

**Dependencies:**
The craypkg-gen 1.2.1 release is supported on the following Cray systems running Cray Linux Environment (CLE) operating system
- Cray XE and Cray XK systems with CLE version 4.2 or later. PGI and Intel modulefile feature only.
- Cray XE and Cray XK systems with CLE version 5.2 or later.
- Cray XC series systems with CLE version 5.1 or later.

Driver support for integrating Third Party C, C++, and Fortran libraries through .pc files using pkg-config is used in CrayPE 2.x and later

**Limitation:**
- Library dependencies for static libraries are not added to the .pc files for keywords Requires.private and Libs.private. A warning is issued by the craypkg-gen tool to advise users to add this information to the libraries .pc files.
- RPM limits packages to 4GB
- k1om rpm creation is unsupported

**Documentation:**
Man pages for craypkg-gen are found by executing module load craypkg-gen and then man craypkg-gen
Also, see the intro_craype-api man page.

Examples for creating modulefiles for Intel, PGI and Python are included in the craypkg-gen doc directory:
- /opt/cray/craypkg-gen/1.2.1/doc/intel_example.txt
- /opt/cray/craypkg-gen/1.2.1/doc/pgi_example.txt
- /opt/cray/craypkg-gen/1.2.1/doc/python_example.txt

Example:
As an example, the Intel 14.0.2.144 compiler was recently released. After installing the compiler the administrator creates a modulefile for this release by executing the following commands:

```
# module load craypkg-gen
# craypkg-gen -m /opt/intel/composer_xe_2013_sp1.2.144
```

This version of the Intel compiler is made default by executing the command:
```
#/opt/admin-pe/set_default_craypkg/set_default_intel_14.0.2.144
```

Installation instructions:
rpm -ivh craypkg-gen-1.2.1-1.201409171832.bfb704c7863de.x86_64.rpm

To change the product version to default after installation:
```
/opt/cray/admin-pe/set_default_files/set_default_craypkg-gen_1.2.1
```
Third Party Products 5.44
HDF5 1.8.13

Purpose:
Fix a bug in HDF5 (1.8.13)

Product and OS Dependencies:
The HDF5 release is supported on the following Cray systems:
   o Cray XE and Cray XK systems with CLE 4.2 and CLE 5.2.
   o Cray XC series systems with CLE 5.1 and CLE 5.2.

The HDF5 1.8.13 release requires the following software products:

One or more compilers:
   o CCE 8.3.0 or later
   o GCC 4.8
   o GCC 4.9
   o Intel 14.0 or later
   o PGI 14.1 or later

For Cray XE and Cray XK systems:
   o xt-asyncpe 5.27 or later / craype 2.1.2 or later

For Cray XC series systems:
   o craype 2.1.2 or later

Bugs Fixed:
815130 - cray-hdf5-parallel gives bad result for integers for version 1.8.13 (Intel).

Notes and Limitations:
The HDF5 compiler scripts (h5cc, h5fc, h5c++) are not include in the release.
The user should use the Cray compiler scripts (cc, ftn, CC) to include the HDF5 header files and link in the HDF5 libraries.

Documentation:
hdf5:

Modulefile:
module load cray-hdf5
   OR
module load cray-hdf5-parallel

Product description:
HDF5 is a data model, library, and file format for storing and managing data. It supports an unlimited variety of datatypes, and is designed for flexible and efficient I/O and for high volume and complex data. HDF5 is portable and is extensible, allowing applications to evolve in their use of HDF5. The HDF5 Technology suite includes tools and applications for managing, manipulating, viewing, and analyzing data in the HDF5 format.

**Installation:**
Run this command to remove the previous package prior to installing the new package:

```bash
rpm --e --nodeps $(rpm -qa | egrep 'cray-hdf5.*-1.8.13*')
```

```bash
rpm -ivh cray-hdf5-*-1.8.13-4.x86_64.rpm
```

The "*" in the install command represents compiler version combinations.

To make this the default version, execute:

```bash
/opt/cray/admin-pe/set_default_files/set_default_hdf5_1.8.13
```

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**PGI**
Pgi 14.9.0

**DDT**
DDT 4.2.1.6_38435

**PGI 14.9.0**

**Purpose:**
Features of PGI 14.9.0 are documented at:

```
```

**Bugs Fixed:**
790969 - PGI RPM uses expect spawn and RPM fails to install in esms shared root
800349 - PGF90-S-0034-Syntax error at or near % (tptr4.F: 65) [19491]
816241 - accuracy lost when real*8 constants are compiled as real*4 float constants [20800]
817086 - Error during PGI 14.7 installation on an esms node

**Limitations and known problems:**
- Starting with 14.9.0, PGI does not support cuda 5.5. On Cray XK systems, it is recommended that pgii/14.9.0 be installed non-default. The following error occurs when using pgii/14.9.0 with cuda 5.5:
  ```
pgnvd-Error-CUDADIR value is not a directory: /opt/pgi/14.9.0/linux86-64/2014/cuda/5.5/bin
```
- PGI 14.9.0 is missing the static library libaccapid.a. Static linking using CrayPE with cray-libsci produces the following linking error:
  
  /usr/bin/ld: cannot find -laccapid

- PGI 14.9.0 produces the following linking error when using the flag -Bstatic in conjunction with CrayPE with CRAYPE_LINK_TYPE=dynamic:
  
  undefined reference to `numa_available'

**Documentation:**

Documentation for PGI 14.9.0 is in /opt/pgi/14.9.0/linux86-64/14.9/doc/

- PGI Fortran Reference, pgifortref.pdf
- PGI 14.9 Release Notes, pgirn149.pdf
- PGI 14.9 Installation Guide, pgiinstall149.pdf

**Installation Instructions:**

```
rpm –ivh pgi-14.9.0-02.x86_64.rpm
```

To make this the default version, execute:

```
/opt/cray/admin-pe/set_default_files/set_default_pgi_14.9.0
```

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**DDT 4.2.1.6_38435**

**Purpose:**

Release of Allinea DDT 4.2.1.6_38435

**Product and OS Dependencies:**

The Cray DDT 4.2.1.6_38435 release is supported on the following Cray systems running Cray Linux Environment(CLE) operating system:

- Cray XE and Cray XK systems running CLE 4.2 and CLE 5.2
- Cray XC series systems with CLE version 5.1 or later

**Documentation:**


```
/opt/cray/ddt/4.2.1.6_38435/doc/RELEASE-NOTES
```

**Installation:**

```
rpm -ivh ddt-4.2.1.6_38435-3.x86_64.rpm
```

To make this the default version, execute:

```
/opt/cray/admin-pe/set_default_files/set_default_ddt_4.2.1.6_38435
```

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Latest PE Product Versions:
This list contains the latest version of all PE products.

Cray Compiling Environment
CCE 8.3.4 (Supported on Cray XE, Cray XK and Cray XC series systems)
CCE 8.3.4
CCE and CPMAT Flexnet license manager - Flexnet-11.12.1 (Not on CDT or CADE)

Cray Debugger Support Tools 2.3.3
CDT 2.3.2 (Supported on Cray XE, Cray XK and Cray XC series systems)
atp  1.7.5
CCDB 1.0.3
lgdb  2.3.2
stat  2.1.0

Cray Environment Setup and Compiling support
CENV 5.45
craype-installer 1.9.02
craypkg-gen 1.2.1
CENV 5.45 (Cray XE and Cray XK systems with CLE 5.2, and all Cray XC series systems)
craype 2.2.1
CENV 5.45 (Cray XE and Cray XK systems with CLE 4.2)
xt-asyncpe 5.28

Cray Message Passing Toolkit
CMPT 7.0.4 (Supported on Cray XE, Cray XK and Cray XC series systems)
cray-mpt 7.0.4
cray-libpmi0 5.0.5
cray-libpmi-devel 5.0.5
cray-ga 5.1.0.5
cray-snplauncher 7.0.4 (Cray XC series systems only)
cray-mpich-compat 1.0.0

Cray Performance Measurement & Analysis Tools
CPMAT 6.2.1 (Supported on Cray XE, Cray XK and Cray XC series systems)
PerfTools 6.2.1
Papi 5.3.2
Apprentice2 for Windows 7 6.2.1 (With 6.2.1 and later included in the PerfTools package.)
Apprentice2 for Mac 6.2.1 (With 6.2.1 and later included in the PerfTools package.)
CCE and CPMAT Flexnet license manager - Flexnet-11.12.1 (Not on CDT or CADE)

Cray Scientific and Math Libraries
CSML 7.3.2 (Supported on Cray XE, Cray XK and Cray XC series systems)
cray-libsci 13.0.1
libsci_acc 3.0.2 (Cray XK and Cray XC series systems only)
petsc 3.5.1.0
trilinos 11.10.1.0
tpsl 1.4.2
fftw 2.1.5.7
fftw 3.3.4.0
acml 5.3.1 (Cray XE and Cray XK systems only)
csmIversion 1.0

Allinea's Distributed Debugging Tool
DDT Debugger 4.2.1.6 (Supported on Cray XE, Cray XK and Cray XC series systems)
DDT 4.2.1.6_38435

TotalView Debugger
TotalView 8.14.0
cray-totalview-8.14.0-totalview-support-1.2.0.2

PGI Compiler 14.9.0
PGI 14.9.0

Third party products for the Programming environment 5.44
Third Party Products 5.44 (Supported on Cray XE, Cray XK and Cray XC series systems)
cray-gdb 7.5.1
cray-hdf5 1.8.13
cray-netcdf 4.3.2
parallel-netcdf 1.5.0
iobuf 2.0.5
java jdk1.7.0_45
libonesided-ntk 1.5.0
cray-gcc-gmp 4.3.2
cray-gcc-mpc 0.8.1
cray-gcc-mpfr 2.4.2
cray-gcc 4.9.1
cray-set-gcc-libs 1.0.0
xt-pathscale sup 4.0.13 (Cray XE and Cray XK systems with CLE 4.2 OS only)

Cray Developer Toolkit
(Supported on Cray XC series systems)
CDT 1.20

Cray Application Developer's Environment
(Supported on Cray XE and XK systems)
CADE 6.36

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