Meeting of the Technical Steering Committee (TSC) Board

Wednesday, October 06th, 2021
11:00am ET

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Agenda/Updates

- Announcements, upcoming talks and deadlines
  - SC'21 BoF – accepted (3 accepts, 1 weak accept)
    - we have requested the **fully virtual option** (a Zoom session provided by SC)
  - Potentially giving additional OpenHPC talks at SC events with community partners (e.g. Dell and RedHat)

- OBS 2.x build system updates

- Q3 quarterly access stats

- Additional weblog analysis (Jeremy)

OBS Build System

- Recall from last time:
  - Struggling to get RHEL packages to be ingested and resolved within our OBS system
  - I had upgraded our OBS instance to Leap 15.2 in order to get newer OBS version, web UI was hosed but was able to fix that
  - Note: Finally clued in that even basic CentOS package resolution from upstream repository was not working

- Updates and issues resolved since last time:
  - Reverted to backup of our OBS instance (the one previously working for CentOS/Leap builds)
  - Determined that ingesting RHEL RPMs directly into OBS back-end will not work (there is no way to define package module information)
  - Need to use the download-on-demand feature of OBS:
    - This is what we have been using for CentOS where you essentially just give OBS a pointer to public package repository (ie, the dnf/yum repo)
    - OBS has additional logic added in recent versions to scan the public repository for module information (the *modules.yaml file published in repodata)

8.x-appstream aarch64 x86_64

Download on demand sources:
  aarch64
    http://mirror.centos.org/centos/8.4.2105/AppStream/aarch64/os/ (rpmmd)
  x86_64
    http://mirror.centos.org/centos/8.4.2105/AppStream/x86_64/os/ (rpmmd)

8.x-baseos aarch64 x86_64

Download on demand sources:
  aarch64
    http://mirror.centos.org/centos/8.4.2105/BaseOS/aarch64/os/ (rpmmd)
  x86_64
    http://mirror.centos.org/centos/8.4.2105/BaseOS/x86_64/os/ (rpmmd)

8.x-powertools aarch64 x86_64

Download on demand sources:
  aarch64
    http://mirror.centos.org/centos/8.4.2105/PowerTools/aarch64/os/ (rpmmd)
  x86_64
    http://mirror.centos.org/centos/8.4.2105/PowerTools/x86_64/os/ (rpmmd)

OBS Build System

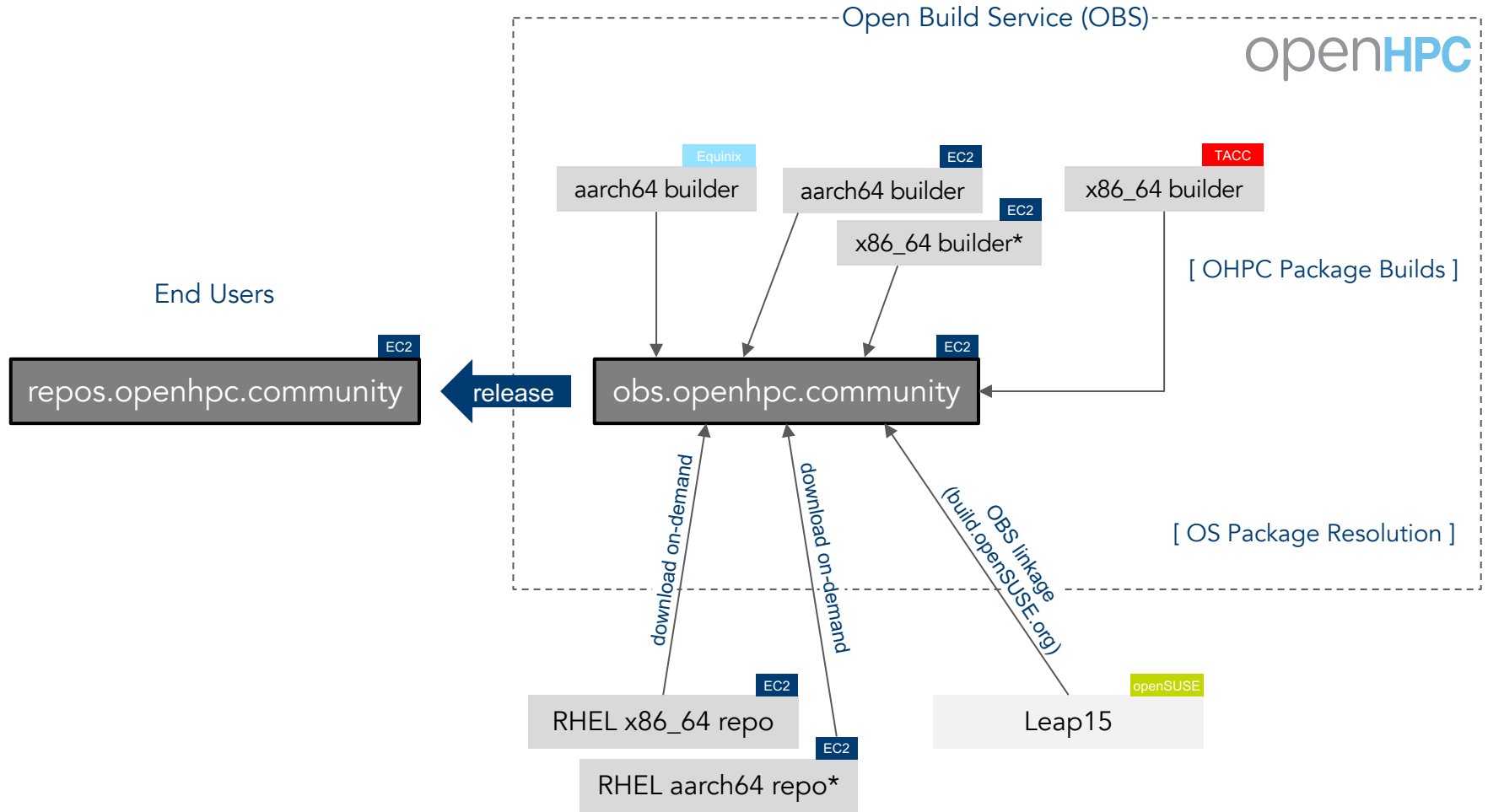- Updates and issues resolved since last time (cont.):

  - Updated x86_64 cloud instance where we download the RHEL packages to serve as repository (restricted access only to OBS server)

  - Have to use `reposync` with `--download-metadata` option in order get necessary repository metadata (which we need for OBS to scan)
    - *Gotcha encountered*: to save space, I was originally restricting the package downloads for reposync to only include (noarch|x86_64) packages since that is all we need to build
    - However, the repo metadata that is downloaded is not consistent and includes information on **all** available packages
    - This confused OBS and would not resolve necessary package dependencies
    - Fix: bite the bullet and download all packages with `reposync`

  - With these updates, finally have a working RHEL project defined in our OBS for which we can resolve OS package dependencies
    - Just for x86_64 at the moment
    - Still need to get RHEL entitlements for aarch64 – once we have that, all the pieces are in place

OpenHPC Build/Delivery Architecture (2.x)

Open Build Service (OBS)

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Equinix
aarch64 builder

EC2
aarch64 builder

EC2
x86_64 builder*

TACC
x86_64 builder

[OHPC Package Builds]

End Users

EC2
repos.openhpc.community

release

EC2
obs.openhpc.community

[OS Package Resolution]

download on-demand

download on-demand

OBS linkage
(build.openSUSE.org)

EC2
RHEL x86_64 repo

EC2
RHEL aarch64 repo*

openSUSE
Leap15

OBS Build System

- Updates and issues resolved since last time (cont.):
  - Added some starting updated packages to 2.4_Factory project and tested builds with the RHEL setup
    - cmake
    - EasyBuild
    - GSL
    - Libfabric
    - MFEM
    - SLURM
    - UCX
  - RHEL builds all completed ok

- Tested latest builds with Rocky recipe as I presume this will be our approach for 2.4 release:
  - **All existing CentOS8 recipes become Rocky8 recipes**
  - In this first check, all tests except for MFEM were successful
    - Resulting libmfem.so is missing some expected symbols, not sure why yet (suspect related to change from MFEM v4.2 -> v4.3, and not the RHEL build)

- Question for discussion:
  - Our current ohpc-release package points to a repo directory named CentOS_8
  - Assume this might be confusing to folks once CentOS8 is EOL'd at the end of the year and that we would publish under RHEL_8 or EL_8 going forward (and will update the ohpc-release package accordingly)
  - So, what to do for existing users?
    - Option #1: force all existing users to install newer version of ohpc-release once we make the switch
    - Option #2: rename CentOS_8 to EL_8 but include soft link for CentOS_8 -> EL_8 so that existing users are uninterrupted

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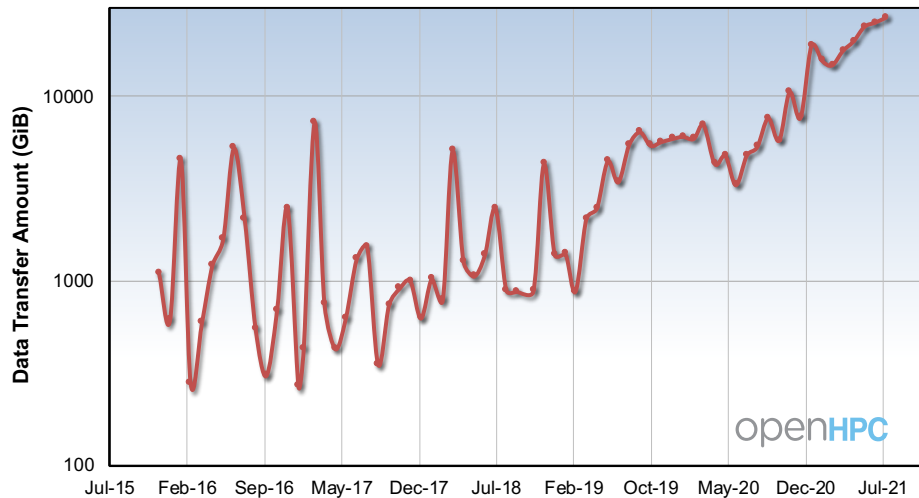# Updated Usage/Access Statistics (thru Q3 2021)

Repo Server(s) Access: **Unique Monthly Visitors**

Stats for build/repo servers (tracking # of unique visitors per month and amount of data downloaded):
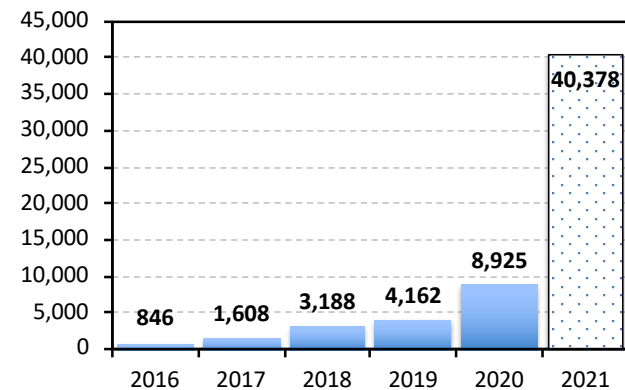
http://build.openhpc.community
http://repos.openhpc.community

Averaging ~22 TB/month download in 2021

Repo Server(s) Access: **Monthly Data Downloaded**

Average # of visitors/month

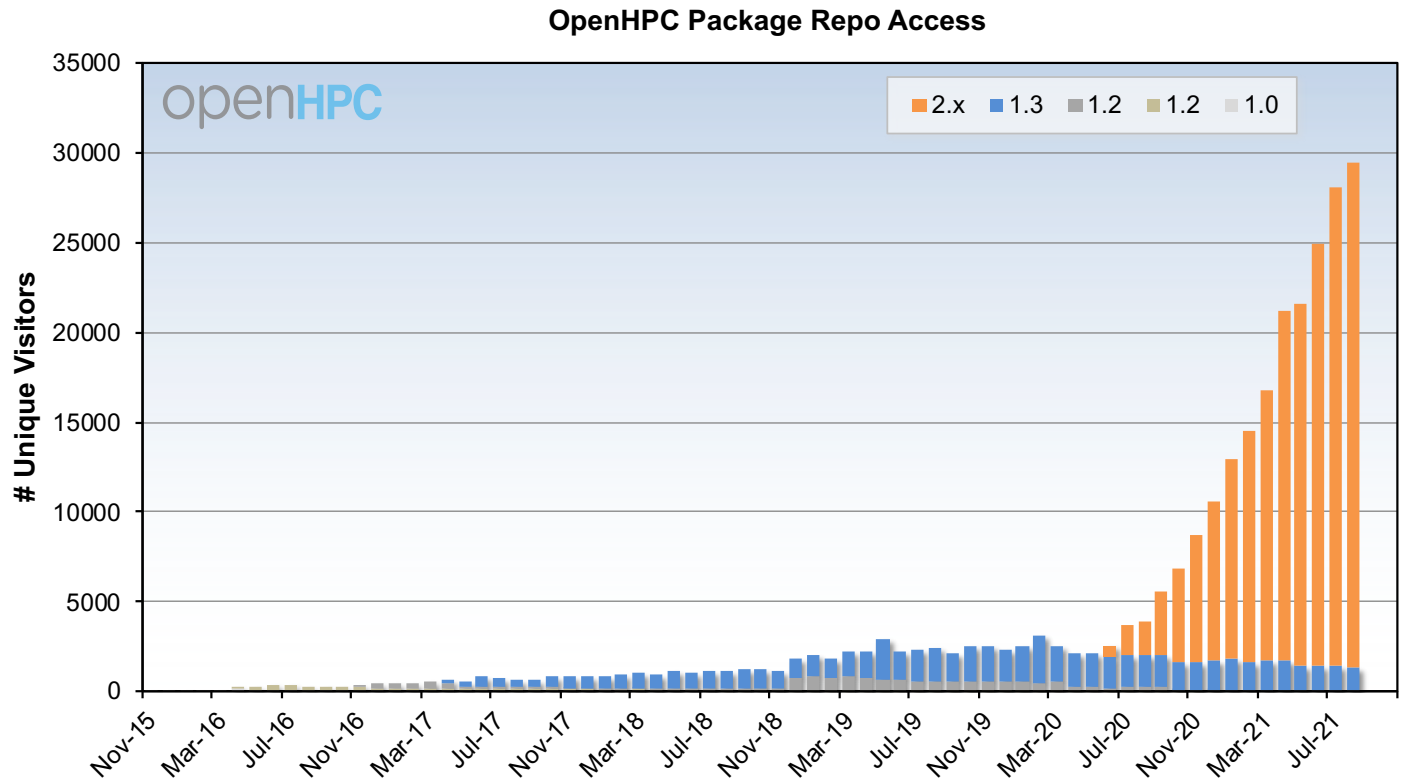|	2016	2017	2018	2019	2020	2021
	846	1,608	3,188	4,162	8,925	40,378

Updated Usage/Access Stats (thru Q3 2021)

- These stats monitor access specifically to package repository metadata (typically expected to be via yum/zypper)

- Repo access binned by minor version

OpenHPC Package Repo Access

Updated Usage/Access Stats (thru Q3 2021)

Architecture specific metrics:

- To provide some characterization, we scrape the access logs to analyze two architecture specific file types:

```
(aarch64|x86_64).rpm
(aarch64|x86_64).tar
```

- Plots compare percentages for the amount of data xfer'ed and the # of unique visitors accessing the (aarch64|x86_64) files
  - includes 2.X repo as of June 2020

Download Comparision by Architecture
(based on data downloaded)
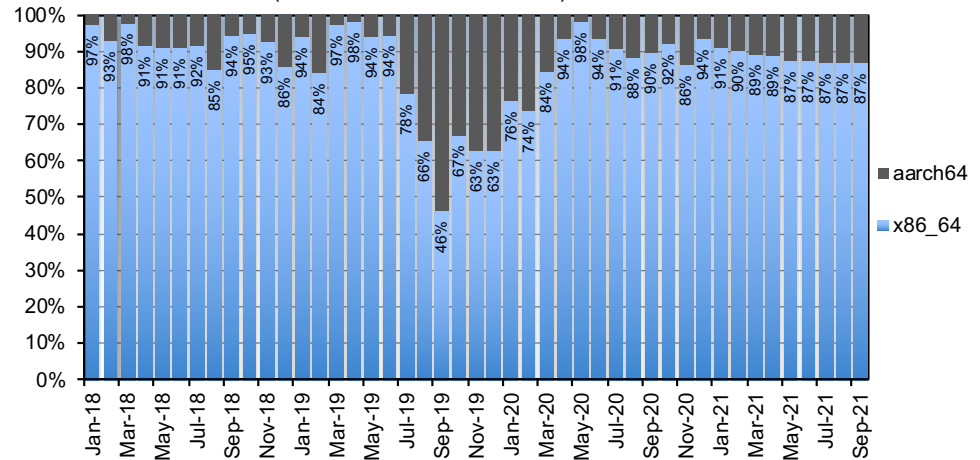
Download Comparision by Architecture
(based on # of unique vistors accessing RPMs)

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