

REC images

All **aarch64** images are differentiated from the **x86_64** artifacts by being suffixed with **.aarch64**.

The main ISO image is [install.aarch64.iso](#).

The [bootcd.aarch64.iso](#) image is used only when deploying via the Akraino Regional Controller using the Telco [Appliance Remote Installer](#), also, can be ignored when following the manual procedure.

REC deployer copies the install.iso to the first controller and reads [user_config.yaml](#) to deploy base OS.

1. [install.aarch64.iso](#) contains

- EFI images isolinux rpms TBL
- guest-image.img is a QEMU QCOW Image which is built using [build_images.sh](#)

2. guest-image.img is a Centos 7 image which contains

- installed RPMs with dib (disk image build)
- tar files:

	File	Available on aarch64
1	./var/lib/caas/images/flannel:0.11.0-4.tar	yes
2	./var/lib/caas/images/chartrepo:1.0.0-6.tar	yes
3	./var/lib/caas/images/chartrepo:1.0.0-6.tar	yes
4	./var/lib/caas/images/cpupooler:0.3.0-1.tar	yes
5	./var/lib/caas/images/sriovdp:2.0.0-4.tar	yes
6	./var/lib/caas/images/kubernetespause:1.15.1-0.tar	yes
7	./var/lib/caas/images/hyperkube:1.15.1-0.tar	yes
8	./var/lib/caas/images/netwatcher:3.3.0-3.tar	yes
9	./var/lib/caas/images/swift:2.21.0-5.tar	yes
10	./var/lib/caas/images/kubedns:1.15.4-2.tar	yes
11	./var/lib/caas/images/custom_metrics:0.5.0-1.tar	yes
12	./var/lib/caas/images/svcwatcher:3.3.0-3.tar	yes
13	./var/lib/caas/images/metrics_server:0.3.3-1.tar	yes
14	./var/lib/caas/images/prometheus:2.10.0-0.tar	yes
15	./var/lib/caas/images/elasticsearch:7.2.0-0.tar	yes
16	./var/lib/caas/images/registry:2.7.1-4.tar	yes
17	./var/lib/caas/images/tiller:2.14.1-1.tar	yes
18	./var/lib/caas/images/etcd:3.3.13-4.tar	yes
19	./var/lib/caas/images/fluentd:1.6.0-0.tar	yes

- ansible installation, in /etc/ansible/roles there are
 - docker
 - flannel
 - and more

3. Packages identified so far when running commands in [build_images.sh](#) :

3.1. yum install --nogpgcheck -y diskimage-builder git python wget which findutils systemd-udev PyYAML parted e2fsprogs xfsprogs

Installed:

	Package	Available on aarch64
1	PyYAML.x86_64 0:3.10-11.el7	yes

2	diskimage-builder.noarch 0:2.16.0-1.el7	yes, installed via pip since we need a newer version that properly supports aarch64
3	e2fsprogs.x86_64 0:1.42.9-13.el7	yes
4	git.x86_64 0:1.8.3.1-20.el7	yes
5	parted.x86_64 0:3.1-29.el7	yes
6	sudo.x86_64 0:1.8.23-3.el7	yes
7	wget.x86_64 0:1.14-18.el7_6.1	yes
8	which.x86_64 0:2.20-7.el7	yes
9	xfsprogs.x86_64 0:4.5.0-19.el7_	yes

3.2. `docker build -f /w/workspace/ta-ci-build/ta/build-tools/docker-context/Dockerfile-dib -t dib /w/workspace/ta-ci-build/ta/build-tools/docker-context -->`
Create dib docker image

`docker build -f /w/workspace/ta-ci-build/ta/build-tools/docker-context/Dockerfile-buildtools -t buildtools /w/workspace/ta-ci-build/ta/build-tools/docker-context -->` Create buildtools docker image

3.3. `/w/workspace/ta-ci-build/ta/build-tools/create_manifest_rpm.sh`

`rpm_macros=/w/workspace/ta-ci-build/work/tmp/manifest-work/rpmmacros`

`/w/workspace/ta-ci-build/ta/build-tools/mock2rpmbuild_config.py --mock-config /w/workspace/ta-ci-build/work/tmp/manifest-work/mock_config/mock.cfg --output-file-path /w/workspace/ta-ci-build/work/tmp/manifest-work/rpmmacros`

`docker run --rm -v /w/workspace/ta-ci-build/work/tmp/manifest-work/rpmmacros:/root/.rpmmacros -v /w/workspace/ta-ci-build/work/tmp/manifest-work:/work alpine:3.9.4 sh -c '\`

`apk add rpm && \`

`rpmbuild --build-in-place --rmspec -ba /work/*.spec && \`

`find /root/rpmbuild -name "*.rpm" | xargs -l "{}" mv {} /work'`

3.4. `docker run --rm --privileged -v /dev:/dev -v /w/workspace/ta-ci-build/work:/work -e WORK=/work -v /w/workspace/ta-ci-build/ta/manifest:/manifest -e MANIFEST_PATH=/manifest -v /w/workspace/ta-ci-build/ta/build-tools:/tools dib /tools/create_golden_image.sh -->` dib image is used to create the image

3.5.

`dib-run-parts` Sourcing environment file `/tmp/in_target.d/install.d/./environment.d/10-bootloader-default-cmdline`

`+ source /tmp/in_target.d/install.d/./environment.d/10-bootloader-default-cmdline`

Installed packages with dependencies:

	Package	Available on aarch64
1	python-libs-2.7.5-80.el7_6.x86_64	yes
2	python-2.7.5-80.el7_6.x86_64	yes
3	python2-setuptools-22.0.5-1.el7.noarch	yes
4	libcom_err-1.42.9-13.el7.x86_64	yes
5	glusterfs-libs-3.12.2-18.el7.x86_64	yes
6	fipscheck-1.4.1-6.el7.x86_64	yes
7	fipscheck-lib-1.4.1-6.el7.x86_64	yes
8	libquadmath-4.8.5-36.el7_6.2.x86_64	yes
9	libgfortran-4.8.5-36.el7_6.2.x86_64	yes
10	boost-system-1.53.0-27.el7.x86_64	yes
11	boost-thread-1.53.0-27.el7.x86_64	yes
12	atlas-3.10.1-12.el7.x86_64	yes
13	python2-pbr-3.1.1-8.el7.noarch	yes

14	python2-six-1.10.0-9.el7.noarch	yes
15	boost-random-1.53.0-27.el7.x86_64	yes
16	boost-iostreams-1.53.0-27.el7.x86_64	yes
17	1:librados2-10.2.5-4.el7.x86_64	yes
18	groff-base-1.22.2-8.el7.x86_64	yes
19	less-458-9.el7.x86_64	yes
20	1:perl-parent-0.225-244.el7.noarch	yes
21	perl-HTTP-Tiny-0.033-3.el7.noarch	yes
22	perl-podlators-2.5.1-3.el7.noarch	yes
23	perl-Pod-Perldoc-3.20-4.el7.noarch	yes
24	1:perl-Pod-Escapes-1.04-294.el7_6.noarch	yes
25	perl-Text-ParseWords-3.29-4.el7.noarch	yes
26	perl-Encode-2.51-7.el7.x86_64	yes
27	perl-Pod-Usage-1.63-3.el7.noarch	yes
28	4:perl-libs-5.16.3-294.el7_6.x86_64	yes
29	perl-Socket-2.010-4.el7.x86_64	yes
30	4:perl-Time-HiRes-1.9725-3.el7.x86_64	yes
31	perl-threads-1.87-4.el7.x86_64	yes
32	perl-Storable-2.45-3.el7.x86_64	yes
33	perl-Carp-1.26-244.el7.noarch	yes
34	perl-Filter-1.49-3.el7.x86_64	yes
35	perl-Exporter-5.68-3.el7.noarch	yes
36	perl-constant-1.27-2.el7.noarch	yes
37	perl-Time-Local-1.2300-2.el7.noarch	yes
38	4:perl-macros-5.16.3-294.el7_6.x86_64	yes
39	perl-threads-shared-1.43-6.el7.x86_64	yes
40	perl-File-Temp-0.23.01-3.el7.noarch	yes
41	perl-File-Path-2.09-2.el7.noarch	yes
42	perl-PathTools-3.40-5.el7.x86_64	yes
43	perl-Scalar-List-Utils-1.27-248.el7.x86_64	yes
44	1:perl-Pod-Simple-3.28-4.el7.noarch	yes
45	perl-Getopt-Long-2.40-3.el7.noarch	yes
46	4:perl-5.16.3-294.el7_6.x86_64	yes
47	1:perl-Error-0.17020-2.el7.noarch	yes
48	perl-TermReadKey-2.30-20.el7.x86_64	yes
49	1:librbd1-10.2.5-4.el7.x86_64	yes
50	python2-stevedore-1.28.0-1.el7.noarch	yes
51	openssh-7.4p1-16.el7.x86_64	yes
52	glusterfs-3.12.2-18.el7.x86_64	yes
53	glusterfs-client-xlators-3.12.2-18.el7.x86_64	yes
54	glusterfs-api-3.12.2-18.el7.x86_64	yes

55	libss-1.42.9-13.el7.x86_64	yes
56	e2fsprogs-libs-1.42.9-13.el7.x86_64	yes
57	python2-pycodestyle-2.0.0-5.el7.noarch	yes
58	python-nose-1.3.7-7.el7.noarch	yes
59	1:python2-numpy-1.11.2-2.el7.x86_64	yes
60	python2-scipy-0.18.0-3.el7.x86_64	yes
61	pyflakes-0.9.2-1.el7.noarch	yes
62	python-decorator-3.4.0-3.el7.noarch	yes
63	python-mccabe-0.2.1-4.el7.noarch	yes
64	python2-flake8-2.6.2-1.el7.noarch	yes
65	pytz-2016.10-2.el7.noarch	yes
66	python2-babel-2.3.4-1.el7.noarch	yes
67	python2-pyparsing-2.1.10-7.el7.noarch	yes
68	rsync-3.1.2-6.el7_6.1.x86_64	yes
69	libyaml-0.1.4-11.el7_0.x86_64	yes
70	PyYAML-3.10-11.el7.x86_64	yes
71	python-networkx-core-1.10-1.el7.noarch	yes
72	python-networkx-1.10-1.el7.noarch	yes
73	libiscsi-1.9.0-7.el7.x86_64	yes
74	libaio-0.3.109-13.el7.x86_64	yes
75	gperftools-libs-2.6.1-1.el7.x86_64	yes
76	10:qemu-img-1.5.3-160.el7_6.2.x86_64	yes
77	libedit-3.0-12.20121213cvs.el7.x86_64	yes
78	openssh-clients-7.4p1-16.el7.x86_64	yes
79	perl-Git-1.8.3.1-20.el7.noarch	yes
80	git-1.8.3.1-20.el7.x86_64	yes
81	dib-utils-0.0.11-1.el7.noarch	yes
82	diskimage-builder-2.16.0-1.el7.noarch	yes
83	e2fsprogs-1.42.9-13.el7.x86_64	yes
84	xfspggs-4.5.0-19.el7_6.x86_64	yes
85	parted-3.1-29.el7.x86_64	yes
86	findutils-4.5.11-6.el7.x86_64	yes
87	wget-1.14-18.el7_6.1.x86_64	yes
88	sudo-1.8.23-3.el7.x86_64	yes
89	which-2.20-7.el7.x86_64	yes
90	python-2.7.5-68.el7.x86_64	yes
91	python-libs-2.7.5-68.el7.x86_64	yes
92	1:findutils-4.5.11-5.el7.x86_64	yes
93	libcom_err-1.42.9-12.el7_5.x86_64	yes
94	python2-libs-2.7.15-4.fc27.x86_64	yes
95	python2-pip-9.0.3-2.fc27.noarch	yes

96	python2-setuptools-37.0.0-2.fc27.noarch	yes
97	python2-2.7.15-4.fc27.x86_64	yes
98	rpm-4.14.2.1-1.fc27.x86_64	yes
99	rpm-plugin-selinux-4.14.2.1-1.fc27.x86_64	yes
100	rpm-libs-4.14.2.1-1.fc27.x86_64	yes
101	rpm-libs-4.14.2.1-1.fc27.x86_64	yes
102	rpm-build-libs-4.14.2.1-1.fc27.x86_64	yes
103	rpm-build-libs-4.14.2.1-1.fc27.x86_64	yes
104	python2-rpm-4.14.2.1-1.fc27.x86_64	yes
105	python2-kitchen-1.2.4-7.fc27.noarch	yes
106	pyliblzma-0.5.3-19.fc27.x86_64	yes
107	python2-pygpme-0.3-25.fc27.x86_64	yes
108	pyxattr-0.5.3-12.fc27.x86_64	yes
109	yum-metadata-parser-1.1.4-20.fc27.x86_64	yes
110	python2-pycurl-7.43.0-9.fc27.x86_64	yes
111	python-urlgrabber-3.10.1-12.fc27.noarch	yes
112	python2-six-1.11.0-1.fc27.noarch	yes
113	python2-iniparse-0.4-26.fc27.noarch	yes
114	cpio-2.12-6.fc27.x86_64	yes
115	cpio-2.12-6.fc27.x86_64	yes
116	yum-3.4.3-513.fc27.noarch	yes
117	yum-3.4.3-513.fc27.noarch	yes
118	yum-utils-1.1.31-514.fc27.noarch	yes
119	python3-rpm-4.14.2.1-1.fc27.x86_64	yes
120	rpm-plugin-systemd-inhibit-4.14.2.1-1.fc27.x86_64	yes
121	wget-1.19.5-1.fc27.x86_64	yes
122	wget-1.19.5-1.fc27.x86_64	yes
123	python3-rpm-4.14.1-1.fc27.x86_64	yes
124	rpm-build-libs-4.14.1-1.fc27.x86_64	yes
125	rpm-build-libs-4.14.1-1.fc27.x86_64	yes
126	rpm-plugin-systemd-inhibit-4.14.1-1.fc27.x86_64	yes
127	rpm-libs-4.14.1-1.fc27.x86_64	yes
128	rpm-libs-4.14.1-1.fc27.x86_64	yes
129	rpm-4.14.1-1.fc27.x86_64	yes
130	rpm-plugin-selinux-4.14.1-1.fc27.x86_64	yes

Packages included in ISO [ta/manifest/packages.yaml](#) and [configuration](#).

	Package	Avaliable on aarch64
1	access-management	yes
2	activators	yes

3	ansible-2.4.4.0-1.el7.ans.noarch	yes
4	ansible-role-ntp	yes
5	bash-completion	yes
6	caas-chartrepo	yes
7	caas-cpupooler	yes
8	caas-custom_metrics	yes
9	caas-danm	yes
10	caas-elasticsearch	yes
11	caas-etcd	yes
12	caas-flannel	yes
13	caas-fluentd	yes
14	caas-helm	yes
15	caas-infra-charts	yes
16	caas-instantiate	yes
17	caas-kubedns	yes
18	caas-kubernetes	yes
19	caas-lcm	yes
20	caas-metrics_server	yes
21	caas-netwatcher	yes
22	caas-prometheus	yes
23	caas-registry	yes
24	caas-security	yes
25	caas-sriovdp	yes
26	caas-svcwatcher	yes
27	caas-swift	yes
28	caas-utils	yes
29	ceph	yes
30	ceph-ansible-3.0.24	yes, bumped to 3.1 for proper aarch64 support
31	ceph-base	yes
32	ceph-common	yes
33	ceph-mds	yes
34	ceph-mgr	yes
35	ceph-mon	yes
36	ceph-radosgw	yes
37	config-encoder-macros	yes
38	config-manager	yes
39	containerd.io -1.2.6-3.3.el7.x86_64	yes
40	distributed-state-server	yes
41	docker-ce-18.09.7-3.el7.x86_64	yes
42	docker-ce-cli-18.09.7-3.el7.x86_64	yes
43	dosfstools	yes

44	dpdk-tools	yes
45	etcd	yes
46	facter	yes
47	galera	yes
48	genisoimage	yes
49	haproxy	yes
50	hostcli	yes
51	hw-detector	yes
52	image-provision	yes
53	infra-ansible	yes
54	inventoryhandlers	yes
55	ipa-deployer	yes
56	iptables-services	yes
57	ironic-virtmedia-driver	yes
58	kernel-4.14.106-200.el7.x86_64	yes
59	lockcli	yes
60	m2crypto	yes
61	mariadb	yes
62	mariadb-devel	yes
63	mariadb-errmsg	yes
64	mariadb-server-galera	yes
65	memcached	yes
66	monitoring	yes
67	nginx	yes
68	ntp	yes
69	openstack-ansible	yes
70	openstack-ansible-galera_client	yes
71	openstack-ansible-galera_server	yes
72	openstack-ansible-haproxy_server	yes
73	openstack-ansible-memcached_server	yes
74	openstack-ansible-openstack_openrc	yes
75	openstack-ansible-os_ironic	yes
76	openstack-ansible-os_keystone	yes
77	openstack-ansible-plugins	yes
78	openstack-ansible-rabbitmq_server	yes
79	openstack-ansible-rsyslog_client	yes
80	openstack-ironic-api	yes
81	openstack-ironic-conductor	yes
82	openstack-ironic-inspector	yes
83	openstack-keystone	yes
84	os-net-config	yes

85	partfs_rootdisk	yes
86	product-manifest	yes
87	python-iloest-library	yes
88	python-keystone	yes
89	python2-peewee	yes
90	python2-shade	yes
91	python2-virtualbmc	yes
92	qemu-kvm-common-ev	yes
93	rabbitmq-server	yes
94	recuserconfighandlers	yes
95	redis	yes
96	start-menu	yes
97	userconfighandlers	yes
98	uwsgi	yes
99	uwsgi-plugin-python2	yes
100	validators	yes
101	vim-enhanced	yes
102	xinetd	yes
103	yarf	yes