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GUIDE- HYPER CLI- COMMANDS

Job Commands

qsub [OPTIONS] FILENAME

Submit jobs using "qsub file_name.sh" (DON'T INCLUDE "hyper") using the file format shown in qsub_example_file.sh found in repo root directory. You can also override configurations in the file when submitting jobs via the qsub command option parameters. You can query job status with qstat and delete jobs in queue with qdel. You can view logs with qlog. Use "nano qsub_example_file.sh" to see the file format for job submits and update configurations. Try "qsub qsub_example_file.sh" to submit a job.

Options:

-j, --job-name TEXT	Name for job group being submitted (each task gets assigned unique id)
-q, --queue TEXT	Name of job queue to submit too (each task gets assigned unique id)
-r, --retries TEXT	Job retries (each task gets assigned unique id)
-d, --definition TEXT	Name for job definition to use (each task gets assigned unique id)
-c, --commands TEXT	Commands (each task gets assigned unique id)
-p, --params TEXT	You can specify --params as a string with {"string_1":"new_string_1, "string_2":"new_string_2}. This will do a string replacement on the bash script you specify)
-a, --array TEXT	You can specify a text file where each line has parameter replacement e.g {"string_1":"new_string_1, "string_2":"new_string_2}. Each line represents an array job. Array jobs will have job IDs uuid--1, uuid --2, uuid--n. See array_example.txt for example input file.
--help	Show this message and exit.

qstat [OPTIONS]

qstat lets you query jobs in your queue for status updates, output and errors. Inputing a job-id will do a GET and return all data on that job. Specifiying a job name will do a query against that job name. Specify only queue name will result in a scan of the whole queue (expensive). Filter for different job status with --filter-status <status>. You can use the --only-job-id-out True to get a string list of job ids that can then be used in a qdel operation for multiple jobs e.g "qdel -q <queue> $(qstat -q <queue> --filter-status <status> --only-job-id-out true)"

Options:

-i, --job-id TEXT	Job id to query
-j, --job-name TEXT	Job name to query

```
-q, --queue TEXT                Queue name to query  [required]
-f, --filter-status [Waiting|Running|Successful|Failed|Error]
                                Filter for job status - Waiting / Running /
                                Successful / Failed
-o, --only-job-id-out [True|False]
                                Set True to only output job ids, can be used
                                to pipe to other commands like qdel
--help                          Show this message and exit.
```

qlog [OPTIONS]

qlog command allows you to query progressive log stream from jobs including SYSTEM logs for debugging, STDOUT logs from job execution and METRIC logs for vCPU and vRAM consumption at 10s intervals.

```
Options:
-i, --job-id TEXT               Job_Id for job to query  [required]
-q, --queue TEXT                Queue that job is in  [required]
-t, --log-type [|STDOUT|METRICS|SYSTEM]
                                Log type to query, options are SYSTEM /
                                STDOUT / METRICS)
--help                          Show this message and exit.
```

qdel [OPTIONS]

Enter job id to delete or enter a job name to do a batch deletion. If you have a lot of jobs in queue you can run the qdel commands multiple times to have multiple lambdas deleting a job name in background.

```
Options:
-q, --queue TEXT        Name of queue to delete jobs from [required]
-i, --job-id TEXT       Job id to delete
-j, --job-name TEXT     Job name batch deletion
--help                  Show this message and exit.
```

Host Commands

hyper hosts create-host [OPTIONS]

Create a new host and start configuring your clusters, queues, task definitions & images. After that you can start running jobs with qsub command

```
Options:
--name TEXT             Give your new host a name, this becomes the
```

```
                        stack name and all resources are associated
                        with this  [required]
  --account TEXT              AWS account to deploy host to, e.g.
                        123xxxx456  [required]
  --region TEXT               AWS region to deploy host to, e.g. eu-west-1
                        [required]
  --vpc TEXT                  Import or create a vpc to use by specifying
                        either a cidr or vpc-id (e.g 10.0.0.0/16 OR
                        vpc-xxxx)  [required]
  --enable-dashboard [True|False]
                        [True/False] Deploy Kibana + ElasticSearch
                        Cluster and data ingestion Lambdas that push
                        all job and worker state changes to cluster.
                        This will create a continuos cost for having
                        solution deployed outside usage  [required]
  --auto-init-main [True|False]   Default [True] - Automatically initialize
                        main region when host is created, put False
                        only if you want to use a different vpc in
                        main region and configure this after host
                        creation with init-main-region command
  --help                      Show this message and exit.
```

With 'hyper hosts create-host-with-cdk' you can also use local AWS CDK installation to deploy the host. This is good if you are doing local development on the front-end-stack rather than using AWS Cloudformation.

hyper hosts list-hosts [OPTIONS]

List existing hosts and use select-host to start making calls to this host

Options:
--help Show this message and exit.

hyper hosts select-host [OPTIONS] HOST_NAME

Select a host to use by passing the name of the host to this command. You can list hosts with list-hosts command

Options:
--help Show this message and exit.

hyper hosts update-host [OPTIONS]

Any changes to your solution stacks in your local repo will be pushed to existing host

Options:

```
  --name TEXT     Name of host to update  [required]
  --account TEXT  Account it is deployed in e.g. 123xxxx456  [required]
  --region TEXT   Region it is deployed in, e.g. eu-west-1  [required]
  --help          Show this message and exit.
```

hyper hosts import-deployment [OPTIONS]

```
  If you want to import a manual cdk deployment into CLI for things like job
  submission, use this command

Options:
  --name TEXT     Stack name from settings.json file  [required]
  --account TEXT  Account stack is deployed to  [required]
  --region TEXT   Main region used by stack  [required]
  --help          Show this message and exit.
```

Region Commands

hyper regions init-main-region [OPTIONS]

```
  START HERE - Initialize the main region for a newly created host. This is
  required before you can start configuring other regions, clusters, queues
  etc. for the host. Default parameters will match the host parameters or
  optionally change them

Options:
  --import-vpc TEXT             [True/False] if you want to import a vpc
                                specify --vpc-id <id> otherwise --cidr
                                <cidr> and one is created for you.
  --cidr TEXT                   If import-vpc is False specify cidr to
                                create e.g 10.0.0.0/16
  --vpc-id TEXT                 If import-vpc is True then specify the vpc-
                                id to import
  --deploy-vpc-endpoints [OFF|DATA_OPTIMISED|FOR_PRIVATE_VPC]
                                Deploy VPC endpoints either for data
                                transfer cost optimisation only (use
                                DATA_OPTIMISED) or to use private
                                subnets(use FOR_PRIVATE_VPC
  --subnet-config [PUBLIC|PRIVATE_ISOLATED|PRIVATE_WITH_NAT]
                                Please choose what internet access to give
                                subnets in your VPC
  --nat-gateways TEXT           How many nat gateways in your vpc (if
                                creating vpc rather than importing)
  --help                        Show this message and exit.
```

hyper regions add-region [OPTIONS]

Add a hub region to your environment to increase scheduling performance and available capacity. Clusters will automatically extend across all enabled regions and by selecting peer to main region "True' you can ensure connectivity to NFS/SMB storage and license servers.

Options:

```
  --name TEXT                     AWS region to add, e.g. eu-west-1
                                  [required]
  --vpc TEXT                      Import or create a vpc to use by specifying
                                  either a cidr or vpc-id (e.g 10.0.0.0/16 OR
                                  vpc-xxxx)  [required]
  --peer-with-main-region [True|False]
                                  If set to True a peering connection is
                                  automatically create between hub region vpc
                                  and main region vpc for network
                                  communication. The main region vpc will need
                                  private subnets available for this to work.
                                  [required]
  --deploy-vpc-endpoints [OFF|DATA_OPTIMISED|FOR_PRIVATE_VPC]
                                  Deploy VPC endpoints either for data
                                  transfer cost optimisation only (use
                                  DATA_OPTIMISED) or to use private
                                  subnets(use FOR_PRIVATE_VPC  [required]
  --subnet-config [PUBLIC|PRIVATE_ISOLATED|PRIVATE_WITH_NAT]
                                  Please choose what internet access to give
                                  subnets in your VPC
  --nat-gateways TEXT             How many nat gateways in your vpc (if
                                  creating vpc rather than importing)
  --help                          Show this message and exit.
```

hyper regions list-regions [OPTIONS]

List all regions currently configured for host.

Options:

```
  --name TEXT  Filter for a specific region, e.g. eu-west-1
  --help       Show this message and exit.
```

hyper regions update-region [OPTIONS]

Update specific configurations for an existing hub region

Options:

```
  --name TEXT                     AWS region to update, e.g. eu-west-1
                                  [required]
  --peer-with-main-region TEXT    If set to True a peering connection is
                                  automatically create between hub region vpc
```

```
                        and main region vpc for network
                        communication
  --deploy-vpc-endpoints [OFF|DATA_OPTIMISED|FOR_PRIVATE_VPC]
                        Deploy VPC endpoints either for data
                        transfer cost optimisation only (use
                        DATA_OPTIMISED) or to use private
                        subnets(use FOR_PRIVATE_VPC
  --subnet-config [PUBLIC|PRIVATE_ISOLATED|PRIVATE_WITH_NAT]
                        Please choose what internet access to give
                        subnets in your VPC
  --nat-gateways TEXT           How many nat gateways in your vpc (if
                        creating vpc rather than importing)
  --help                    Show this message and exit.
```

hyper regions delete-region [OPTIONS]

```
  Delete a hub region. Specify the region as --name <region>

Options:
  --name TEXT  AWS region to delete, e.g. eu-west-1  [required]
  --help       Show this message and exit.
```

Cluster Commands

hyper clusters add-cluster [OPTIONS]

```
  Add a cluster to your environment, clusters will span all enabled regions.

Options:
  --name TEXT                 Give cluster a name  [required]
  --instance-list TEXT          Instance types to use as a string list e.g
                        ["m5.large","c5.large"], default is
                        ["optimal"]  [required]
  --max-vCPUs TEXT              Specify the maximum vCPUs per region, total
                        max vCPUs will be regions enabled * max-
                        vCPUs per region  [default: 1000; required]
  --compute-envs INTEGER        Amount of compute environments per cluster..
                        will divide max-vCPUs by compute-envs
                        [default: 3]
  --type [SPOT|ONDEMAND]        Choose EC2 pricing plan [SPOT/ONDEMAND]
                        [default: SPOT; required]
  --bid-percentage TEXT         For SPOT only - Bid percentage of on-demand
                        cost
  --allocation-strategy [SPOT_CAPACITY_OPTIMIZED|BEST_FIT_PROGRESSIVE|BEST_FIT]
                        Batch allocation strategy to use [BEST_FIT_P
                        ROGRESSIVE/BEST_FIT/SPOT_CAPACITY_OPTIMIZED
  --iam-policies TEXT           Add additional IAM policies to instance role
```

```
                        in your cluster (policies needed by hyper
                        batch are automatically added)
  --compute-resources-tags <TEXT TEXT>...
                        Assign tags for cluster, Repeat for multiple
                        tags e.g "--compute-resources-tags TAGKEY1
                        TAGVALUE1 --compute-resources-tags TAGKEY2
                        TAGVALUE2".
  --main-region-image-name TEXT   OPTIONAL Specify custom AMI name for an
                        image that exists in your main region that
                        you want to use for cluster. Cyclone will
                        copy the image to any hub regions where it
                        does not exist and use local versions
  --help                Show this message and exit.
```

hyper clusters update-cluster [OPTIONS]

```
  Update specific configurations for an existing cluster

Options:
  --name TEXT                 Choose cluster to update  [required]
  --instance-list TEXT        List instance types to use e.g "m5.xlarge
                        c5.xlarge", you can also choose optimal
  --max-vCPUs TEXT            Specify the maximum vCPUs per region, total
                        max vCPUs will be regions enabled * max-
                        vCPUs per region
  --compute-envs TEXT         Amount of compute environments per cluster
                        (max 3).. will divide max-vCPUs by compute-
                        envs
  --type TEXT                 Pricing option of spot or on-demand
                        [SPOT/ON-DEMAND]
  --bid-percentage TEXT       If import-vpc is True then specify the vpc-
                        id to import
  --allocation-strategy TEXT    If set to True a peering connection is
                        automatically create between hub region vpc
                        and main region vpc for network
                        communication
  --iam-policies TEXT         Add additional iam policies to instance role
                        in your cluster e.g ["custom_policy"]
                        (policies needed by hyper batch are
                        automatically added)
  --compute-resources-tags <TEXT TEXT>...
                        Assign tags for cluster, Repeat for multiple
                        tags e.g "--compute-resources-tags TAGKEY1
                        TAGVALUE1 --compute-resources-tags TAGKEY2
                        TAGVALUE2".
  --main-region-image-name TEXT   OPTIONAL Specify Image name for an image
                        that exists in your main region that you
```

```
                        want to use for cluster. Cyclone will copy
                        the image to any hub regions where it does
                        not exist and use local versions
  --help                Show this message and exit.
```

hyper clusters delete-cluster [OPTIONS]

```
  Delete a cluster. Specify the name as --name <cluster name>

Options:
  --name TEXT  AWS cluster name to delete  [required]
  --help       Show this message and exit.
```

hyper clusters list-clusters [OPTIONS]

```
  List all clusters currently configured for host.

Options:
  --name TEXT  List clusters
  --help       Show this message and exit.
```

Queue Commands

hyper queues add-queue [OPTIONS]

```
  Add a queue to your environment, queues will span all enabled regions.

Options:
  -rw, --region-distribution-weights <TEXT INTEGER>...
                        IMPORTANT: Assign region weights for worker
                        distribution. Repeat for multiple regions
                        e.g "hyper queues add-queue -rw eu-west-1 3
                        -rw eu-central-1 1". Not including a region
                        or using a weight of 0 means that region is
                        not used. If you set automate region weights
                        to True then weights are determined for you
                        based on EC2 spot placement score.
  --name TEXT                 Give queue a name  [required]
  --compute-environment TEXT      Name of cluster to assign to this queue
                        [required]
  --automate-region-weights [True|False]
                        If set to true hyper-batch will use the EC2
                        Spot Placement Score API to set region
                        weight distribution of jobs based on
                        available capacity. The spot placement score
                        looks at instance types configured for the
                        cluster mapped to this queue as well as the
```

max vCPU per region configured in cluster.
[default: True]
--help Show this message and exit.

hyper queues list-queues [OPTIONS]

List all queues currently configured for host.

Options:
--name TEXT List queues
--help Show this message and exit.

hyper queues update-queue [OPTIONS]

Update specific configurations for an existing queue by specifying name of queue and config(s) to change with new values

Options:
--name TEXT Name of queue to update [required]
--compute-environment TEXT Name of cluster to assign to this queue
--automate-region-weights [True|False]
If set to true hyper-batch will use the EC2 Spot Placement Score API to set region weight distribution of jobs based on available capacity. The spot placement score looks at instance types configured for the cluster mapped to this queue as well as the max vCPU per region configured in cluster. [default: True]
-rw, --region-distribution-weights <TEXT INTEGER>...
IMPORTANT: Assign region weights for worker distribution. Repeat for multiple regions e.g "hyper queues add-queue -rw eu-west-1 3 -rw eu-central-1 1". Not including a region or using a weight of 0 means that region is not used. If you set automate region weights to True then weights are determined for you based on EC2 spot placement score.
--help Show this message and exit.

hyper queues delete-queue [OPTIONS]

Delete a queue. Specify the name as --name <name>

Options:
--name TEXT Queue name to delete [required]
--help Show this message and exit.

Images Commands

hyper images add-image [OPTIONS]

IMPORTANT: Images need to have the start.sh script, Python, AWS CLI & boto3 to work with hyper-batch. The hyper-batch automated pipeline will build the image associated with local Dockerfile directory you specify and push these out to ECR in all enabled regions. By referencing the image name in job definitions the local image within each region will be referenced in the local AWS Batch job definition.

```
Options:
  --name TEXT                 Give image a name  [required]
  --local-build-directory TEXT  Name of cluster to assign to this image
                              [required]
  --help                      Show this message and exit.
```

hyper images list-images [OPTIONS]

List all images currently configured for host.

```
Options:
  --name TEXT  List images
  --help       Show this message and exit.
```

hyper images delete-image [OPTIONS]

Delete an image. Specify the name as --name <name>

```
Options:
  --name TEXT  image name to delete  [required]
  --help       Show this message and exit.
```

hyper images replace-with-local-image [OPTIONS]

IMPORTANT: You can push a local docker image to replace an existing image built with add-image command. If you do not want to build your image in cloud create a placeholder image and then use this to replace that image with your local version. This ensures images are replicated across regions and correctly associated with job definitions

```
Options:
  --name TEXT              Name of image to replace  [required]
  --local-docker-image TEXT  Local docker image repository and tag e.g
                           repository:tag  [required]
```

```
  --account TEXT          AWS account in use, e.g. 123xxxx456  [required]
  --help                  Show this message and exit.
```

Job Definition Commands

hyper definitions add-definition [OPTIONS]

```
  Add a definition to your environment, definitions will span all enabled
  regions.

Options:
  --name TEXT                 Give definition a name  [required]
  --use-cyclone-image [True|False]
                              Use a cyclone created image or remote image
                              [True/False]  [default: True; required]
  --cyclone-image-name TEXT   OPTIONAL Cyclone Image Name if using this
  --image-uri TEXT            OPTIONAL Image uri if using remote image
  --jobs-to-workers-ratio INTEGER
                              IMPORTANT Ratio to control how many workers
                              get spun up for a given number of jobs
                              submitted. Number of jobs submitted per
                              minute (or 1000) will be divided by this
                              ratio to decide how many additional workers
                              to spin up for those jobs. Ratio 1 means 1
                              worker for every job and 50 means 1 worker
                              created for every 50 tasks where jobs will
                              then run in series on workers.  [default: 1;
                              required]
  --vcpus INTEGER             REQUIRED Number of vCPUs to use for tasks
                              [default: 1; required]
  --memory-limit-mib INTEGER  OPTIONAL Set memory limit for tasks
  --linux-parameters TEXT     OPTIONAL Set linux parameters with e.g
                              {"init_process_enabled": "True",
                              "shared_memory_size": 10}
  --ulimits TEXT              OPTIONAL Set ulimits as list of jsons e.g
                              [{"hard_limit":123, "UlimitName": "CORE",
                              "soft_limit": 123}]
  --mount-points TEXT         OPTIONAL Set mount points for tasks as list
                              of jsons e.g [{"container_path": "tmp_host",
                              "read_only": "False", "source_volume":
                              "volume"}]
  --host-volumes TEXT         OPTIONAL Set host volumes for tasks as list
                              of jsons e.g [{"name": "volume",
                              "source_path": "tmp"}]
  --gpu-count TEXT            OPTIONAL Set gpu count for tasks
  --environment TEXT          OPTIONAL Set environment variables for tasks
                              e.g {"key1":"val1", "key2":"val2"}
```

```
  --privileged [True|False]      OPTIONAL Set privileged to True to give
                                 container root access to instance  [default:
                                 False]
  --user TEXT                    OPTIONAL Set user to use in container
  --timeout_minutes TEXT         Set a timeout on containers if you want to
                                 ensure they shut down after a certain amount
                                 of time. Keep in mind this is not a job
                                 timeout but a worker timeout as jobs run in
                                 series on the workers
  --iam-policies TEXT            Add additional IAM policies to worker role
                                 (policies needed by hyper batch are
                                 automatically added)
  --log-driver
[|AWSLOGS|FLUENTD|GELF|JOURNALD|JSON_FILE|LOGENTRIES|SPLUNK|SYSLOG]
                                 OPTIONAL Set a log driver to use, default is
                                 what is configured on docker daemon
  --log-options TEXT             OPTIONAL Specify options for log driver e.g
                                 {"max-size": "10m", "max-file": "3" }
  --enable-qlog [True|False]     OPTIONAL Enable cyclone log collection for
                                 qlog, turning this off can save cost if
                                 using another logging mechanism
  --help                         Show this message and exit.
```

hyper definitions list-definitions [OPTIONS]

```
  List all definitions currently configured for host.

Options:
  --name TEXT  List definitions
  --help       Show this message and exit.
```

hyper definitions update-definition [OPTIONS]

```
  Update specific configurations for an existing definition

Options:
  --name TEXT                    Definition to update  [required]
  --use-cyclone-image TEXT       Use a cyclone created image or remote image
                                 [True/False]
  --cyclone-image-name TEXT      OPTIONAL Cyclone Image Name if using this
  --image-uri TEXT               Image uri in ECR to use
  --vcpus TEXT                   REQUIRED Number of vCPUs to use for tasks
  --memory-limit-mib TEXT        OPTIONAL Set memory limit for tasks
  --linux-parameters TEXT        OPTIONAL Set linux parameters with e.g
                                 {"init_process_enabled": "True",
                                 "shared_memory_size": 10}
  --ulimits TEXT                 OPTIONAL Set ulimits as list of jsons e.g
```

```
                        [{"hard_limit":123, "UlimitName": "CORE",
                        "soft_limit": 123}]
  --mount-points TEXT           OPTIONAL Set mount points for tasks
  --host-volumes TEXT           OPTIONAL Set host volumes for tasks as list
                        of jsons e.g [{"name": "volume",
                        "source_path": "tmp"}]
  --gpu-count TEXT              OPTIONAL Set gpu count for tasks
  --environment TEXT            OPTIONAL Set environment variables for tasks
  --privileged [True|False]     OPTIONAL Set privileged to True to give
                        container root access to instance
  --user TEXT                   OPTIONAL Set user to use in container
  --jobs-to-workers-ratio TEXT  IMPORTANT Ratio to control how many workers
                        get spun up for a given number of jobs
                        submitted. Number of jobs submitted per
                        minute (or 1000) will be divided by this
                        ratio to decide how many additional workers
                        to spin up for those jobs. Ratio 1 means 1
                        worker for every job and 50 means 1 worker
                        created for every 50 tasks where jobs will
                        then run in series on workers.
  --timeout_minutes TEXT        Set a timeout on containers if you want to
                        ensure they shut down after a certain amount
                        of time. Keep in mind this is not a job
                        timeout but a worker timeout as jobs run in
                        series on the workers
  --iam-policies TEXT           Add additional IAM policies to worker role
                        (policies needed by hyper batch are
                        automatically added)
  --log-driver
[|AWSLOGS|FLUENTD|GELF|JOURNALD|JSON_FILE|LOGENTRIES|SPLUNK|SYSLOG]
                        OPTIONAL Set user to use in container
  --log-options TEXT            OPTIONAL Specify options for log driver e.g
                        {"max-size": "10m", "max-file": "3" }
  --enable-qlog [True|False]    OPTIONAL Enable cyclone log collection for
                        qlog, turning this off can save cost if
                        using another logging mechanism
  --help                    Show this message and exit.
```

hyper definitions delete-definition [OPTIONS]

```
  Delete a definition. Specify the name as --name <name>

Options:
  --name TEXT  definition name to delete  [required]
  --help       Show this message and exit.
```