**CloudHub Fabric (CloudHub)**

CloudHub Fabric provides scalability, workload distribution, and added reliability to applications on CloudHub. This functionality is powered by CloudHub’s scalable load-balancing service, a worker scale-out feature, and a persistent message queues feature.

You can enable CloudHub Fabric features on a per-application basis using the Runtime Manager console, when you deploy a new application or redeploy an existing application.

**Prerequisites**

* To use CloudHub Fabric, you must have a CloudHub Enterprise account or a CloudHub Partner account. You should also be familiar with deploying applications using the Runtime Manager console.

**About Worker Scale-Out**

CloudHub lets you select an amount and a size for the workers of your application, providing horizontal scalability. This fine-grained control over Computing Capacity provisioning gives you the flexibility to scale your capacity depending on your needs. At any time, you can increase your capacity to handle large loads during peak load times or decrease your capacity during low load times. Use the drop-down menus next to Workers to pick the amount and a size for the workers of your application and configure the computing power that you need.

Each application can be deployed with up to 8 workers of any kind, totaling up to 128 vCores. You may be limited to fewer vCores, based on how many are available in your subscription. See [Worker Sizing](https://docs.mulesoft.com/runtime-manager/deploying-to-cloudhub) for information about deploying to multiple vCores.

Worker scale-out also adds reliability. MuleSoft automatically distributes multiple workers for the same application across two or more data centers for maximum reliability.

When you deploy your application to two or more workers, you can distribute workloads across these instances of MuleSoft. CloudHub provides the following:

1. An HTTP load-balancing service that automatically distributes HTTP requests among your assigned workers
2. Persistent message queues (see below)

Batch jobs only run on a single worker at a time, and can’t be distributed across multiple workers. If MuleSoft restarts in the same deployment, then the status persists, and the batch continues processing. If the entire application is updated or redeployed while the batch is running, then the rest of the batch job stops. The main solution for persistent batch jobs in CloudHub is to use Cloud Object Store.

**About Persistent Message Queues**

With persistent message queues, you have zero message loss. Persistent message queues lets you distribute workloads across a set of workers.

* Persistent message queues lets the workers allocate the workload distribution if your application is deployed to more than one worker. . For example, if a large file is placed in a queue, then the workers divide up the file, and process it in parallel.
* Persistent message queues guarantees the delivery of your messages, even if multiple workers or data centers go down, providing additional message security for high-stakes processing.
* Persistent message queues gives you runtime visibility into your queues. Click the Queues tab in the Runtime Manager console to view your queues.
* Persistent message queues can help you meet your security and compliance needs. If you enable data at rest encryption for all your persistent message queues, then any shared application data written to a persistent message queue is encrypted. Encrypting your persistent message queues helps you meet your security and compliance needs.
* Messages in a persistent queue are kept for up to 4 days. There’s no limit on the message size or the number of messages in a persistent message queue.
* The worker’s persistent message queue is located in the same region as the worker.

Note that persistent message queues don’t guarantee one-time-only message delivery. Copies of messages may be sent. If one-time-only message delivery is critical, then carefully consider the possible effect of multiple deliveries before you enable persistent message queues.

**Enabling CloudHub Fabric Features**

You can enable or disable CloudHub Fabric features from the Runtime Manager console when you first deploy an application to CloudHub or after you deploy an application. To enable or disable CloudHub Fabric features after deployment, click the Deployment tab in the Runtime Manager console.

1. Next to Workers, select the options from the drop-down menus to define the number and the type of workers assigned to your application. See [Worker Sizing](https://docs.mulesoft.com/runtime-manager/deploying-to-cloudhub" \l "worker-sizing) for more information about deploying to multiple workers.
2. Click an application to view the overview, and then click Manage Application.
3. Click Settings, and then click the Persistent Queues checkbox.

If your application is already deployed, then redeploy it, in order for your new settings to take effect.