CamServer Server Allocation

Server	Purpose	CPU	Network
sf-daqsync-01	Proxies and generic on-demand pipelines	E5-2690 2.60GHz	2x10Gb
sf-daqsync-03	Stream Only	E5-2690 2.60GHz	1x10Gb & 1x25Gb
sf-daqsync-08	Testing	E5-2690 2.60GHz	2x10Gb
sf-daqsync-09	Generic	G 5218R 2.10GHz	2x25Gb
sf-daqsync-10	Generic & Machine permanent pipelines	G 5218R 2.10GHz	2x25Gb
sf-daqsync-11	PSSS	G 6342 2.80GHz	2x25Gb
sf-daqsync-12	Maloja	G 6342 2.80GHz	2x25Gb
sf-daqsync-13	Alvra	G 6342 2.80GHz	2x25Gb
sf-daqsync-14	Bernina	G 6342 2.80GHz	2x25Gb
sf-daqsync-15	Furka	G 6342 2.80GHz	2x25Gb
sf-daqsync-16	Cristallina	G 6342 2.80GHz	2x25Gb
sf-daqsync-17	Free	G 6342 2.80GHz	2x25Gb

CamServer Configuration Checklist

- Pipelines pushing to DataBuffer or ImageBuffer must use BSREAD cameras or streams, never EPICS cameras.

- When a CamServer pipeline is added as a source to the ImageBuffer, one have to make sure to remove the direct camera URL from the ImageBuffer source list (if it is configured). The camera source URL can be verified with:
  ```
  caget <CAMERA_NAME>:BSREADCONFIG
  ```

- Servers can only run 2 high-resolution cameras each at 100Hz. 3 cameras can only be used with ROIs, or at 50Hz.

- Ideally high-resolution images size should be limited to 4 Mpx.
  - For bigger images, ZMQ latencies make the data propagation difficult even for pipelines with low CPU usage.

- If pipelines use background subtraction we should check if the background image has the same shape.
  - If hardware ROI is used, it is lost after a camera power cycle and the current background image is then invalid. Either the ROI should be set again to the former value, or another background image should be taken.

- We should not change processing script of CamServer pipelines pushing to the DataBuffer during user operation.
  - As this may change the channels, it may increase error in DataBuffer and lead to node failures.

CamServer Troubleshoting

- Problem: CSM Pipeline or Camera status panel remains empty upon startup or stops updating.
- Cause: proxy servers not running or frozen.
- Solution: restart the proxy service:
  - Login to sf-daqsync-01 (sudoer, Alex, Rene or Simon)
  - Execute:

```
sudo systemctl restart camera_manager pipeline_manager
```

- Problem: CSM http://sf-daqsync-X line in Status-Server table remains empty or stops updating.
- Cause: The worker service is not running in node X.
- Solution: restart the worker service:
  - Login to sf-daqsync-X (sudoer, Alex, Rene or Simon)
  - If line is frozen in Pipelines tab:

```
sudo systemctl restart pipeline_worker
```

  - If line is frozen in Cameras tab:

```
sudo systemctl restart camera_worker
```

CamServer Troubleshoting

- Problem: Pipeline instance in Status Instances tab freezes: Time column does not update.
- Cause: pipeline frozen/crashed OR
  this is a single-threaded PUSH pipeline with no connected client (blocked in this case on ZMQ send).
- Solution:
  - If it is a PUSH pipeline, or you are not sure, select the pipeline row and press “Inspect”. If the table updates then the pipeline is healthy. If it is a DataBuffer source, reconnect this pipeline to the DataBuffer
- If not (or if the test above fails) select the pipeline row and press “Stop”. If it is permanent, it will be restarted.

- Problem: Pipeline is not transmitting, but it is not frozen (Time column is updating).
- Cause: Multiple.
- Solution: Check in the pipeline row at the Instances table:
  - If RX==0 than the problem is with the source -> Investigate the camera/source stream
  - If RX!=0 but TX==0 the problem in the Pipeline, and can have multiple reasons:
    - Wrong configuration.
    - Bad background image.
    - Bug on processing script.
    - Incompatible input data.
  - If RX!=0 and TX!=0: the pipeline is healthy:
    - The number of connected clients can be seen in column Clients.
    - If it is a DataBuffer source, reconnect this pipeline to the DataBuffer