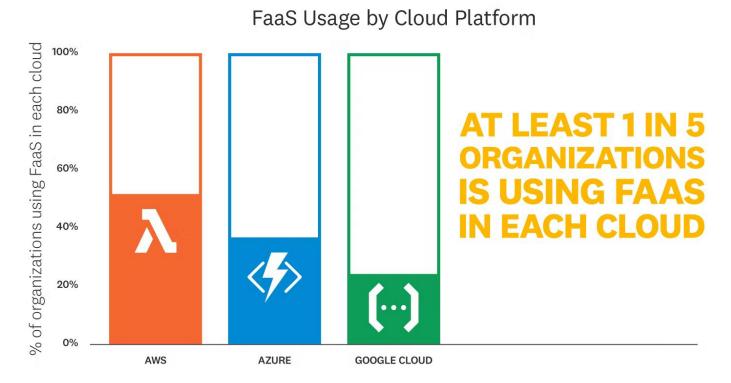
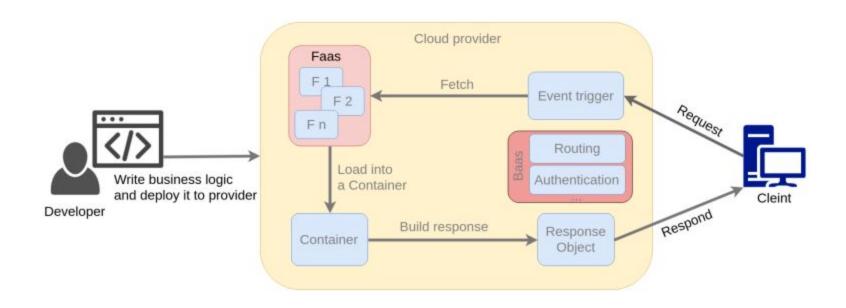
## Serverless in a hybrid architecture

Abdelmoujib Megzari Bassam Gamal

## Percentage of organizations using serverless



## How it works?













**TypeScript** 

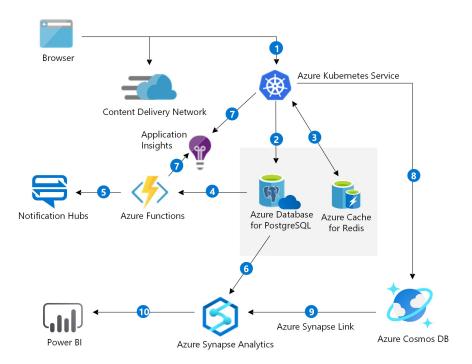






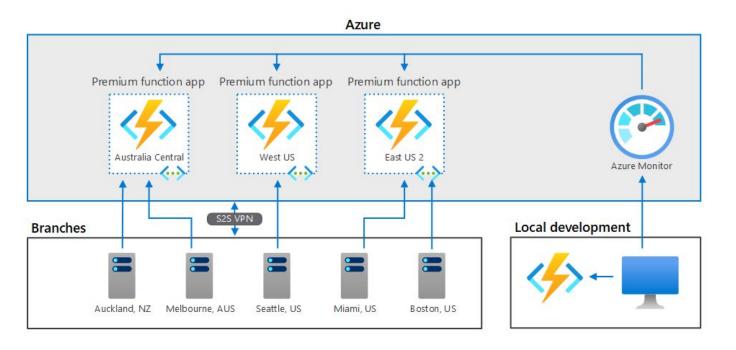
```
[FunctionName("GetInformationFromApi")]
public async Task RunAsync([ActivityTrigger] CustomJobInfo jobInfo,
    [ServiceBus("bus-reports", Connection = "JOB_RESULT_SERVICEBUS")]
   IAsyncCollector<JobResult> asyncCollector, ILogger logger)
    logger.LogInformation($"job {jobInfo.Name} JobId {jobInfo.JobId} Job started");
   var stopwatch = Stopwatch.StartNew();
   stopwatch.Start();
        int rowCount = 0;
       var information =
            await relationService.GetInfo($"{jobInfo.MetaData["Url"]}/active");
        foreach (var info in information)
            await storeInfo(info, jobInfo.MetaData["Url"], logger);
           rowCount++;
        await asyncCollector.AddAsync(new JobResult
           JobId = jobInfo.JobId,
           Created = DateTime.Now,
           Duration = stopwatch.Elapsed.Minutes,
           RowCount = rowCount,
           StatusId = JobStatus.Success
    catch (Exception ex)
        logger.LogError(ex,
           $"job {jobInfo.Name} JobId {jobInfo.JobId} Error occurred in execution");
   stopwatch.Stop();
   logger.LogInformation(
       $"job {jobInfo.Name} JobId {jobInfo.JobId} completed at time {DateTime.Now:0}. Message sent to service bus - Completed in {stopwatch.Elapsed}");
```

## **Cloud Native**



Source Microsoft

# Hybrid Problem

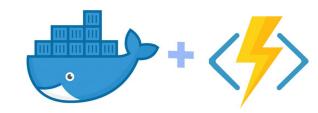


## Solutions

1- Run Azure Functions OnPrem.

Use Core tools, Docker or Kubernetes(KEDA)







### Solutions Cont'd

### Pros:

- Faster development for developers using CLI.
- Faster network communication.
- Pricing might be cheap.

#### Cons:

Extra overhead of managing services yourself.

### Solutions Cont'd

# 2- Connect Azure Function to OnPrem network using Premium plan and VPN/ExpressRoute

- Premium plan makes sure all functions run within a specific subnet.
- Adjusting the firewall and connecting both Cloud and OnPrem.

Feature	Consumption plan	Premium plan	Dedicated plan
Inbound IP restrictions and private site access	Yes	Yes	Yes
Virtual network integration	No	Yes	Yes

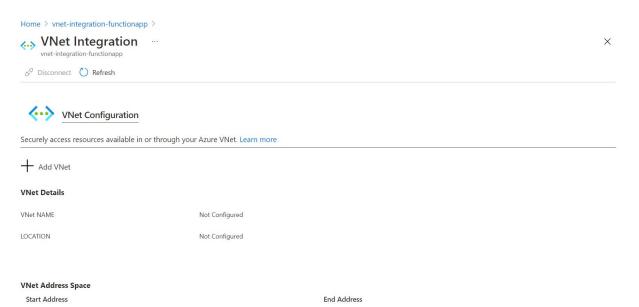
## Solutions Cont'd

### Pros:

- Easier configuration.
- Usage of managed services out-of-the-box.

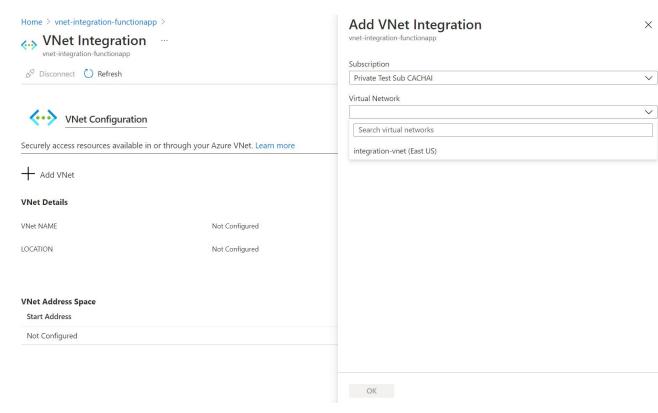
### Cons:

- Cost.
- Speed.

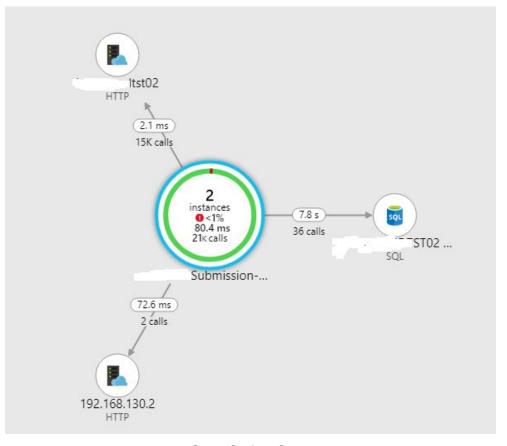


Source Microsoft

Not Configured



Source Microsoft



Source Stackoverflow

### Conclusion

### Serverless supports hybrid architecture

Solution 1: Run Azure functions on Prem

- Managing services yourself.
- Faster Communication.
- Cheap.

#### Solution 2: Premium plan

- No server management needed.
- Slower Communication.
- Expensive.

# Questions



### References

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- 2- https://docs.microsoft.com/en-us/azure/azure-functions/functions-scale
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- 4- <a href="https://landscape.cncf.io/serverless">https://landscape.cncf.io/serverless</a>
- 5- <a href="https://docs.microsoft.com/en-us/azure/azure-functions/supported-languages">https://docs.microsoft.com/en-us/azure/azure-functions/supported-languages</a>
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# Thanks