



ZINGA  
SOFT

**Zingasoft**  
CLOUD-BREEDS-INNOVATION

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**Running nopCommerce on Azure Tips and  
Tricks and Lessons Learned**

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Before we begin... 😊



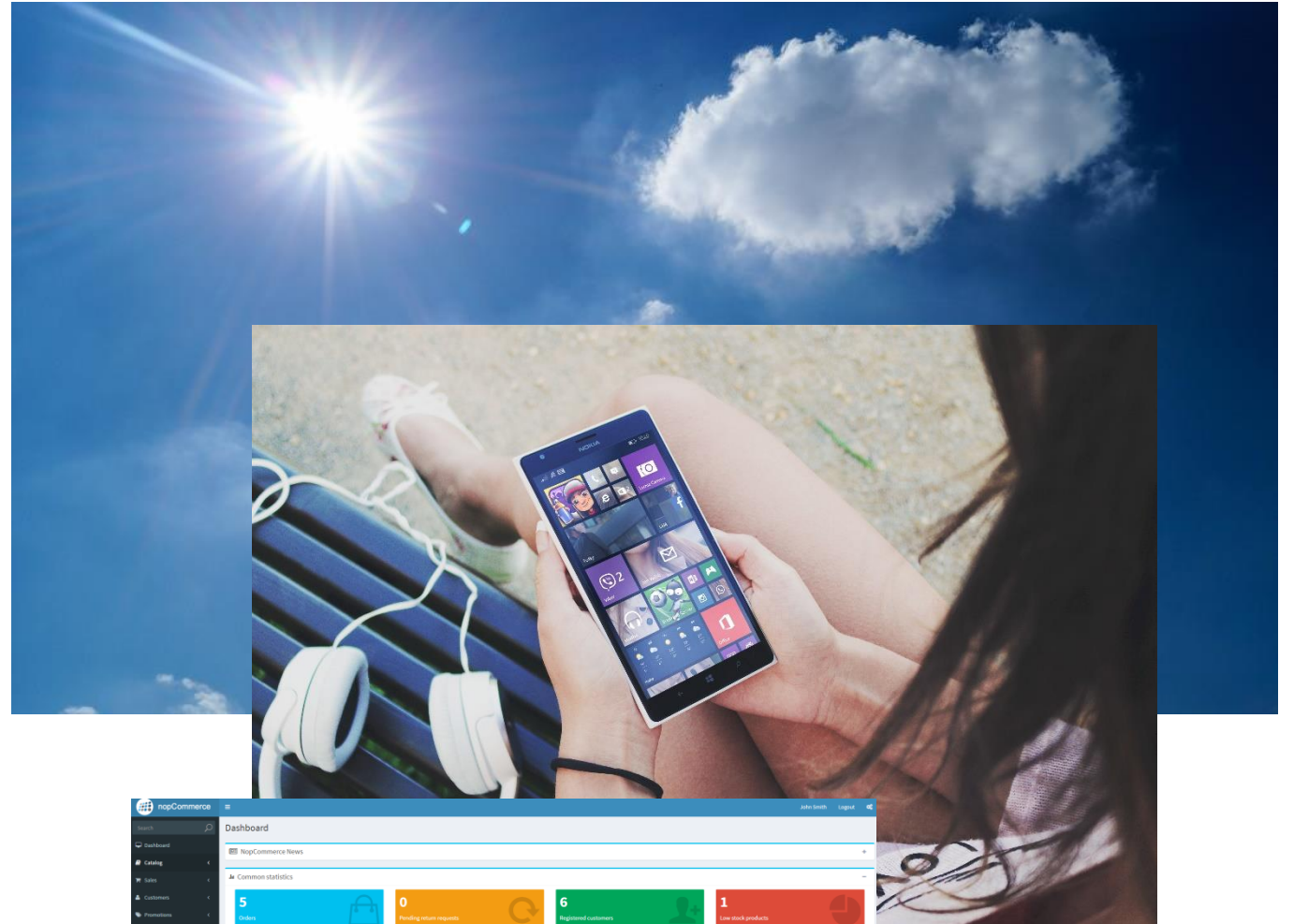
# Talking Points

- A few words about Zingasoft and me
- Brief intro about Azure
- nopCommerce on Azure
  - Choose the right Architecture
  - Decide on the right tier
  - Some tips and trick
- Takeaways



# Zingasoft

- **Born in the cloud company**
- **Helping businesses enter into the digital era**
- **Customizing and integrating nopCommerce solutions**
- **Covering a broad spectrum of development services around cloud, web and mobile technologies (Xamarin)**



The screenshot shows the nopCommerce dashboard with the following data:

### Common statistics

5 Orders	0 Pending return requests	6 Registered customers	1 Low stock products
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### Orders

Order status	Today	This Week	This Month	This Year	All time
Pending	\$0.00	\$0.00	\$0.00	\$2,488.00	\$2,488.00
Processing	\$0.00	\$0.00	\$0.00	\$1,897.00	\$1,897.00
Complete	\$0.00	\$0.00	\$0.00	\$43.50	\$43.50
Cancelled	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

### Incomplete orders

Status	Total	Count
Total unpaid orders (pending payment status)	\$2,488.00	2 - view all
Total not yet shipped orders	\$4,225.00	2 - view all
Total incomplete orders (pending order status)	\$2,488.00	2 - view all

### Latest Orders

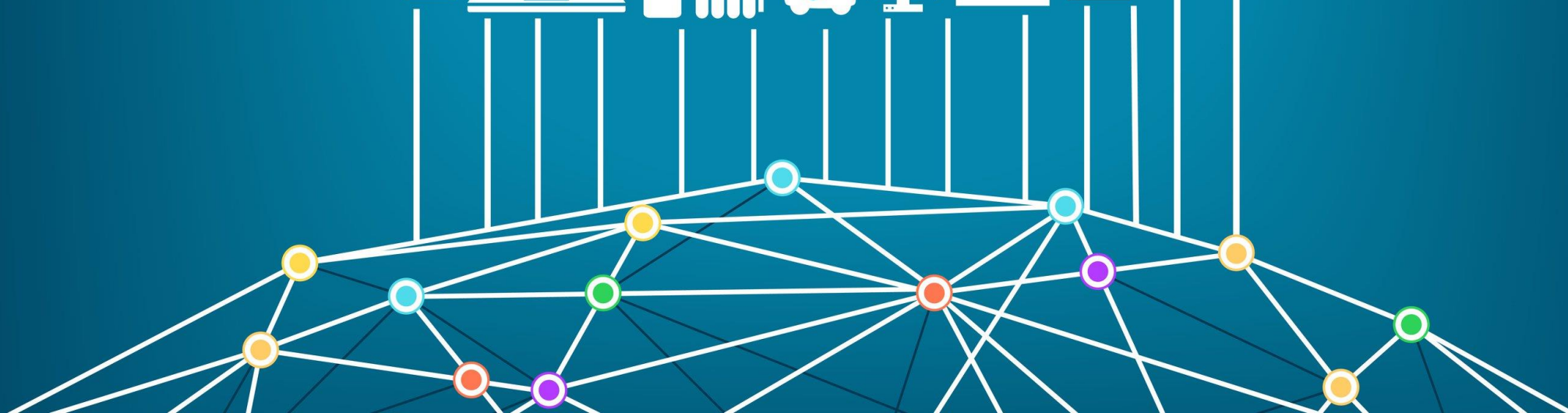
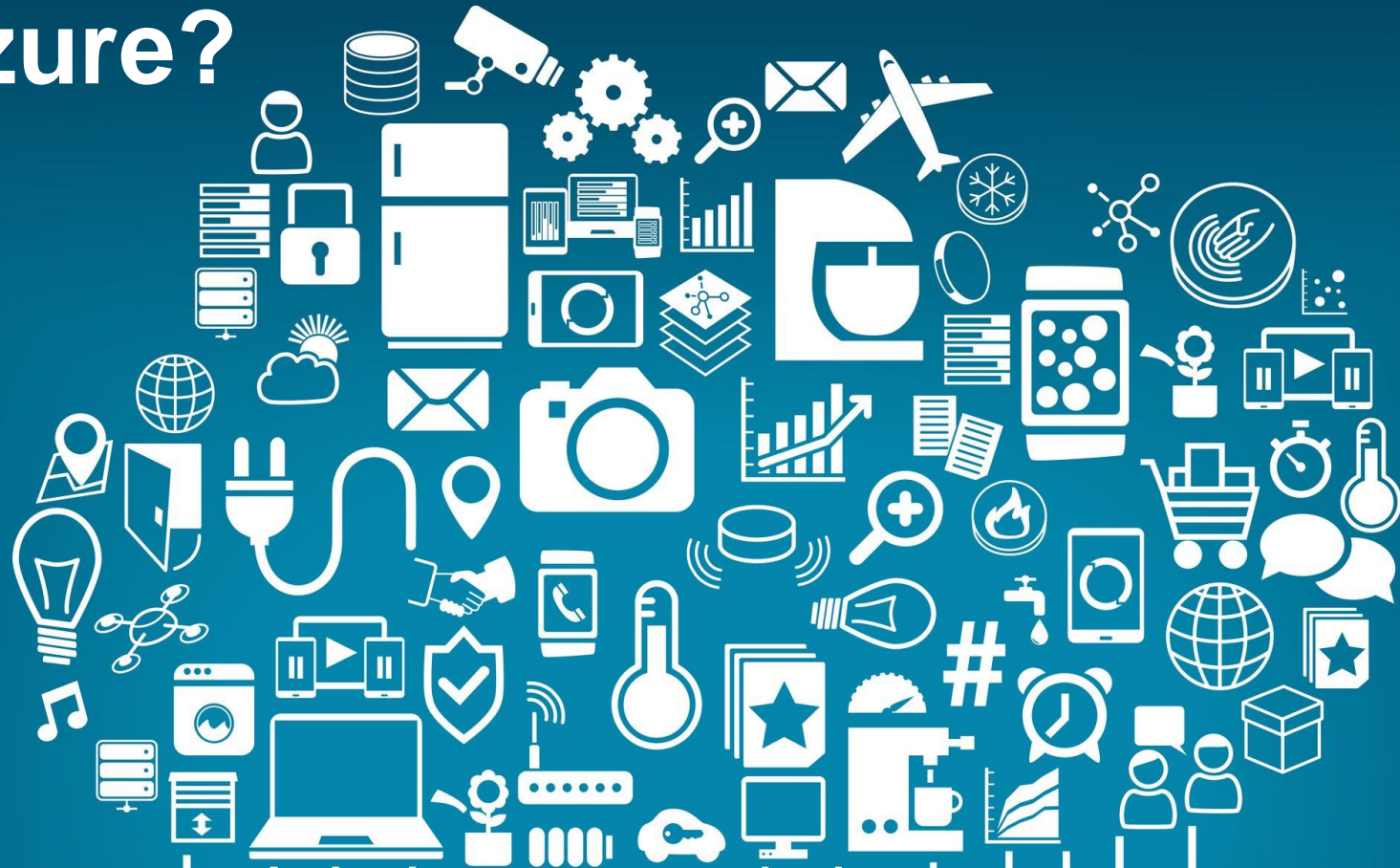
Order ID	Order status	Customer	Store	Created on	View
5	Complete	Victoria Terres (victoria_terres@nopCommerce.com)	nopCommerce demo store	6/15/2018 11:40:09 AM	View
4	Complete	Parvika (parvika_terres@nopCommerce.com)	nopCommerce demo	6/14/2018 11:40:09 AM	View

### Popular search keywords

Keyword	Count
computer	34
camera	30
cellphone	27



# What is Azure?



## Developer Services



Visual Studio Team Services



Azure DevTest Labs



VS Application Insights\*



HockeyApp



Developer Tools

## Management & Security



Azure Portal



Scheduler



Operations Management Suite



Automation



Log Analytics



Key Vault



Security Center\*

### Compute



Virtual Machines



Virtual Machine Scale Sets



Cloud Services



Batch



RemoteApp



Service Fabric



Azure Container Service

### Web & Mobile



Web Apps



Mobile Apps



Logic Apps\*



API Apps



API Management



Notification Hubs



Mobile Engagement



Functions\*

### Data & Storage



SQL Database



DocumentDB



Redis Cache



Storage: Blobs, Tables, Queues, Files and Disks



StorSimple



Search



SQL Data Warehouse\*



SQL Server Stretch Database

### Analytics



Data Lake Analytics\*



Data Lake Store\*



HDInsight



Machine Learning



Stream Analytics



Data Factory



Data Catalog



Power BI Embedded\*

### Internet of Things & Intelligence



Azure IoT Suite



Azure IoT Hub



Event Hubs



Cortana Intelligence Suite



Cognitive Services\*

### Media & CDN



Media Services



Content Delivery Network

### Identity & Access Management



Azure Active Directory



B2C\*



Domain Services\*



Multi-Factor Authentication

## Hybrid Integration



BizTalk Services



Service Bus



Backup



Site Recovery

## Networking



Virtual Network



ExpressRoute



Traffic Manager



Load Balancer



Azure DNS\*



VPN Gateway



Application Gateway

## Developer Services

 Visual Studio Team Services

 Azure DevTest Labs

 VS Application Insights\*

 HockeyApp

 Developer Tools

## Management & Security

 Azure Portal

 Scheduler

 Operations Management Suite

 Automation

 Log Analytics


 Key Vault

 Security Center\*





### Compute

-  Virtual Machines
-  Virtual Machine Scale Sets
-  Cloud Services
-  Batch
-  RemoteApp
-  Service Fabric
-  Azure Container Service

### Web & Mobile

-  Web Apps
-  Mobile Apps
-  Logic Apps\*
-  API Apps
-  API Management
-  Notification Hubs
-  Mobile Engagement
-  Functions\*



### Data & Storage

-  SQL Database
-  DocumentDB
-  Redis Cache
-  Storage: Blobs, Tables, Queues, Files and Disks
-  StorSimple
-  Search
-  SQL Data Warehouse\*
-  SQL Server Stretch Database

### Analytics

-  Data Lake Analytics\*
-  Data Lake Store\*
-  HDInsight
-  Machine Learning
-  Stream Analytics
-  Data Factory
-  Data Catalog
-  Power BI Embedded\*

### Internet of Things & Intelligence

-  Azure IoT Suite
-  Azure IoT Hub
-  Event Hubs
-  Cortana Intelligence Suite
-  Cognitive Services\*

### Media & CDN

-  Media Services
-  Content Delivery Network

### Identity & Access Management

-  Azure Active Directory
-  B2C\*
-  Domain Services\*
-  Multi-Factor Authentication

## Hybrid Integration

 BizTalk Services

 Service Bus

 Backup

 Site Recovery

## Networking

 Virtual Network

 ExpressRoute

 Traffic Manager

 Load Balancer

 Azure DNS\*

 VPN Gateway

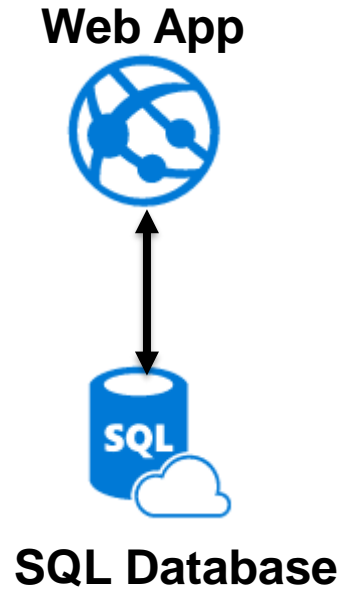
 Application Gateway

# Choosing the Right Architecture

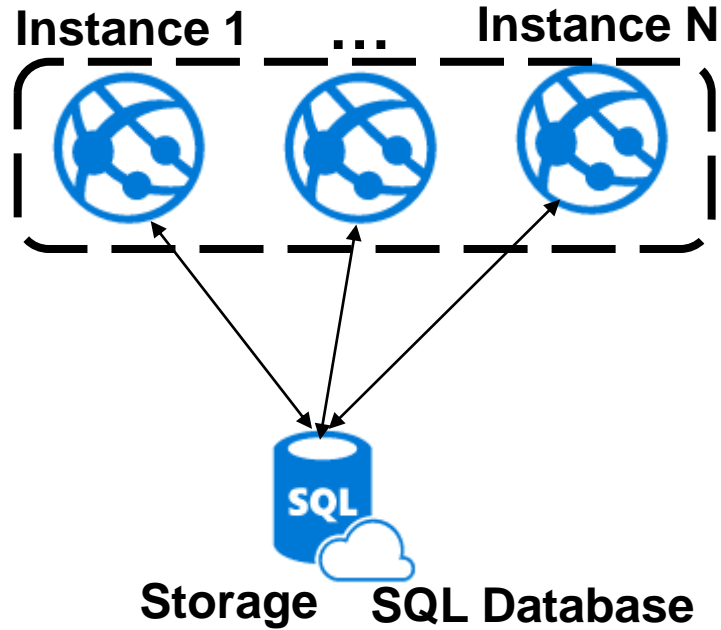




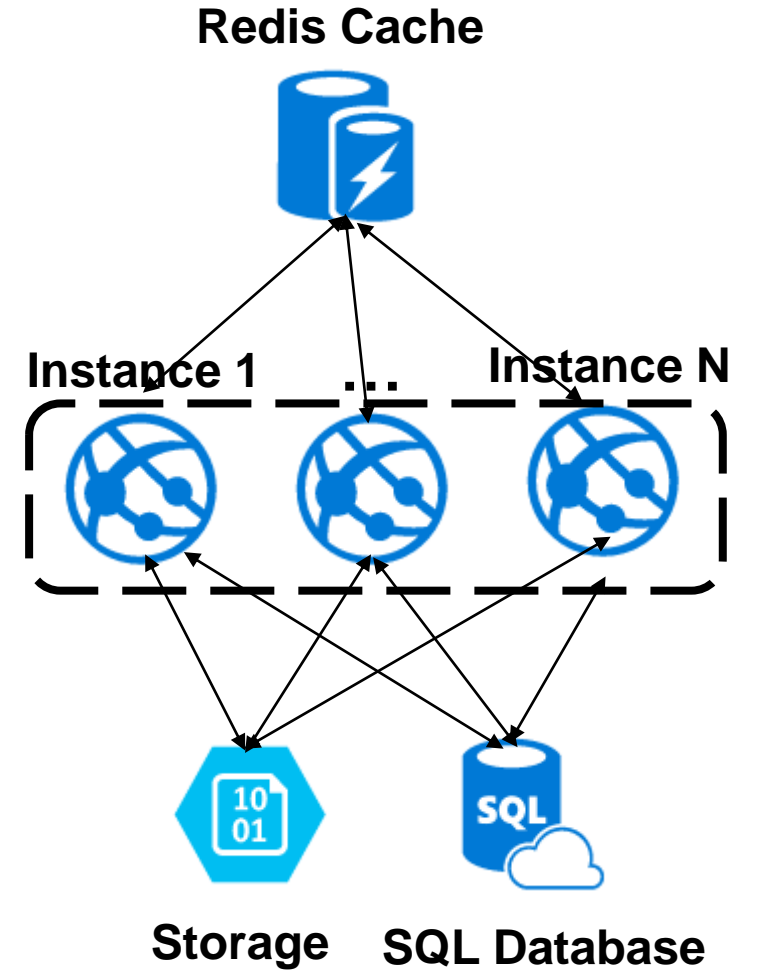
# What are the options?



***Single Instance***



***Multi-instance,  
distributed file storage***



***Multi-instance,  
distributed file storage,  
distributed cache***

# Let's compare the highlights

	Single Instance	Multi-Instance, distributed file storage	Multi-Instance, distributed file storage & cache
Starting cost	12 Euro/month*	51 Euro/month*	86 Euro/month*
Instances	1 shared/dedicated	3 (up to 20 at additional cost)	3 (up to 20 at additional cost)
Scaling options	Vertical	Vertical and Horizontal	Vertical and Horizontal
Auto scale	No	Yes	Yes
Custom Domain	Yes	Yes	Yes
SSL	+ Additional Cost	Yes	Yes
Automated Backup	+Additional Cost	+Additional Cost	+Additional Cost

*\*All costs are per service plan (NOT per single web application)*

# Let's compare the highlights

	Single Instance	Multi-Instance, distributed file storage	Multi-Instance, distributed file storage & cache
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*\*All costs are per service plan (NOT per single web application)*

**So the more I pay... the  
better it gets ?! 😊**



**Now... let's see how strong we need to be  
to run nopCommerce on Azure**



# Carefully consider

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*App Service Plan*



*Database Tier*



*Redis Tier*

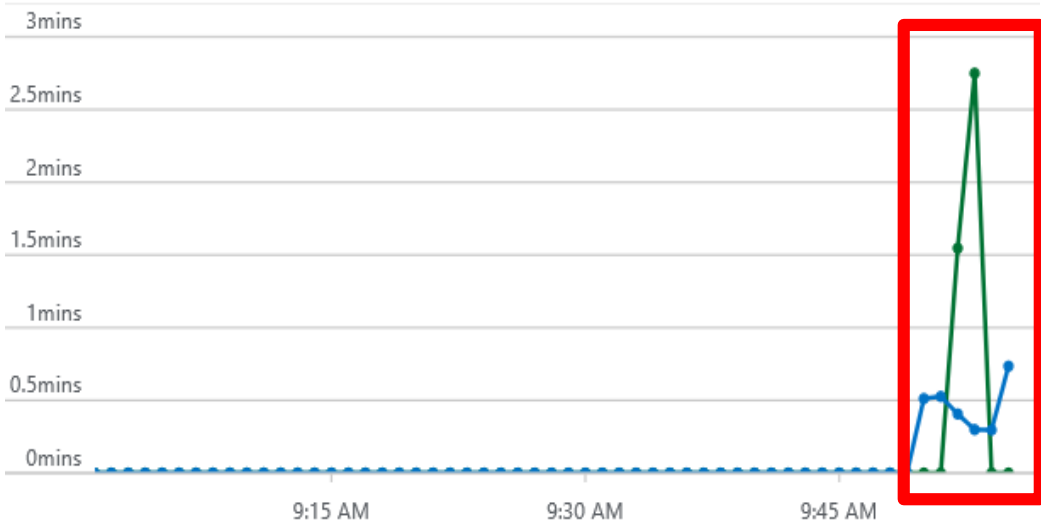
**Huh, why-y-y?...**



# 50 concurrent users, 2 minutes duration

## Web App Performance (*“Shared” tier*)

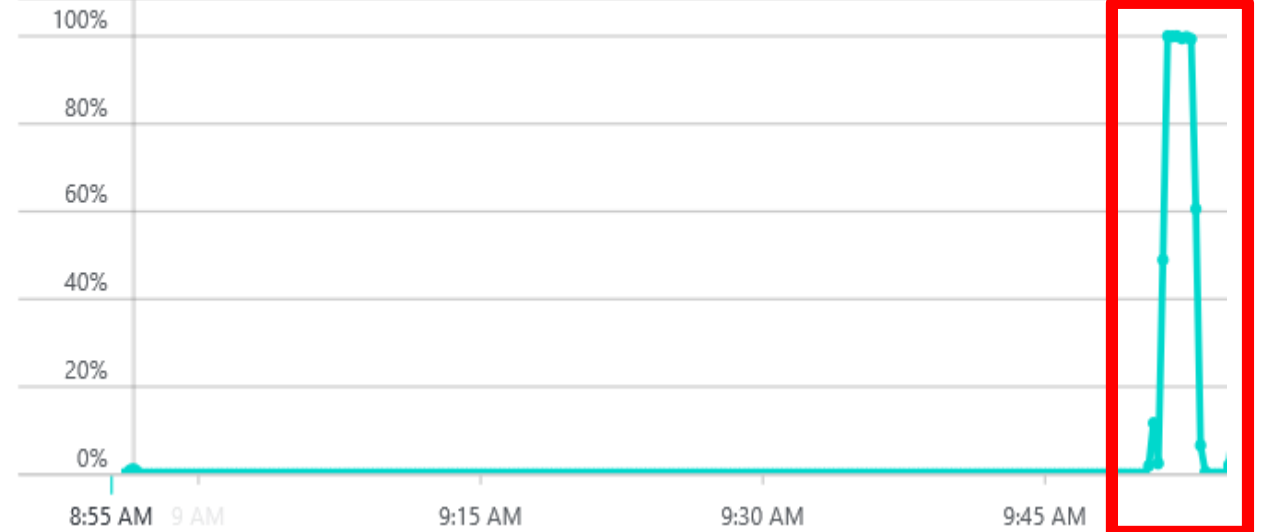
Average Response Time and CPU Time past hour



AVERAGE RESPONSE TIME  
**2.75 mins**

## DB Performance (*“Basic” tier – 5 DTUs*)

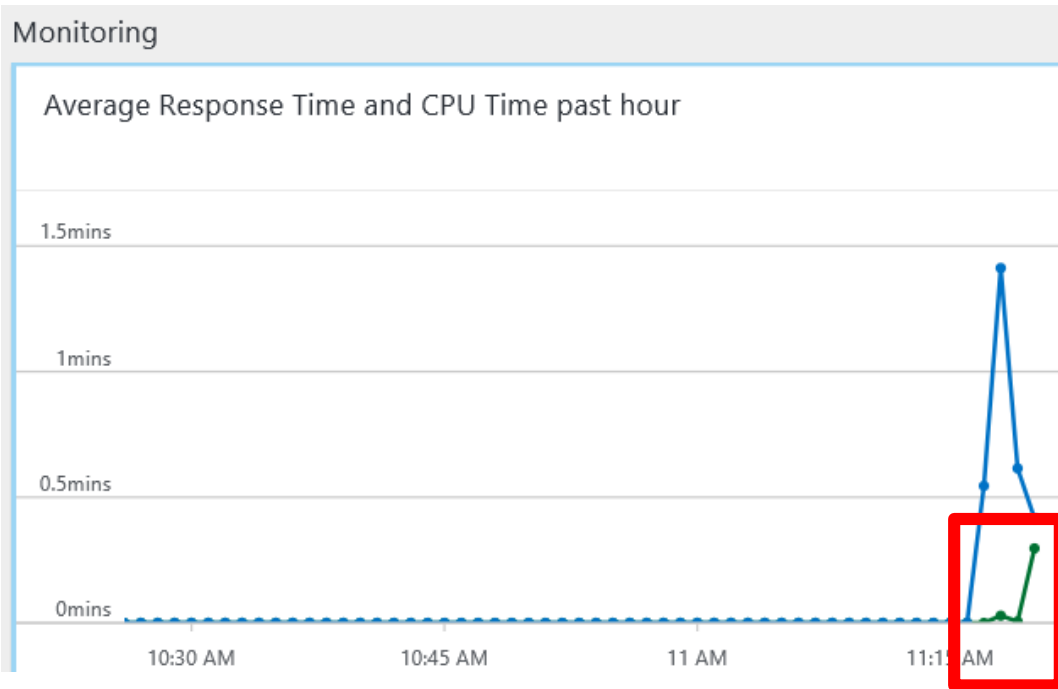
DTU percentage past hour





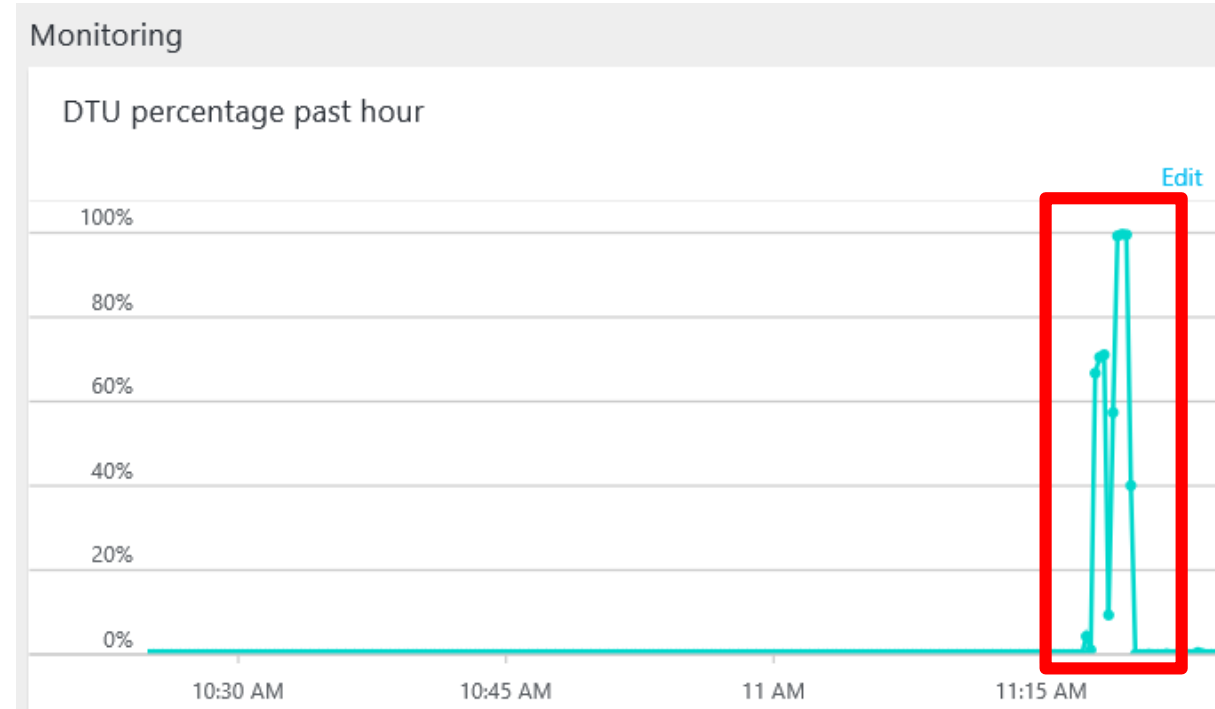
# 50 concurrent users, 2 minutes duration

## Web App Performance (*“Shared” tier*)



AVERAGE RESPONSE TIME  
**17.8<sub>s</sub>**

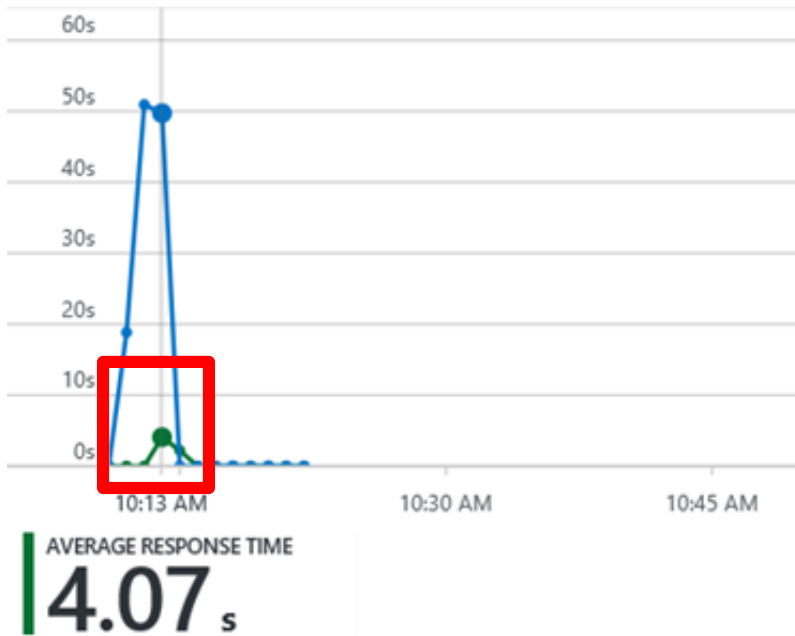
## DB Performance (*“S0” tier – 10 DTUs*)



# 50 concurrent users, 2 minutes duration

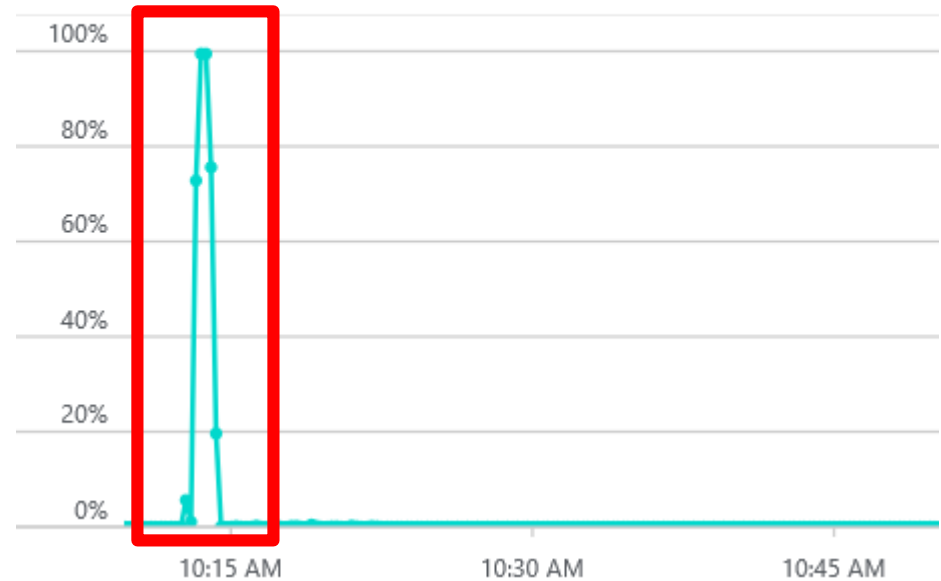
## Web App Performance (*“Shared” tier*)

Average Response Time and CPU Time past hour



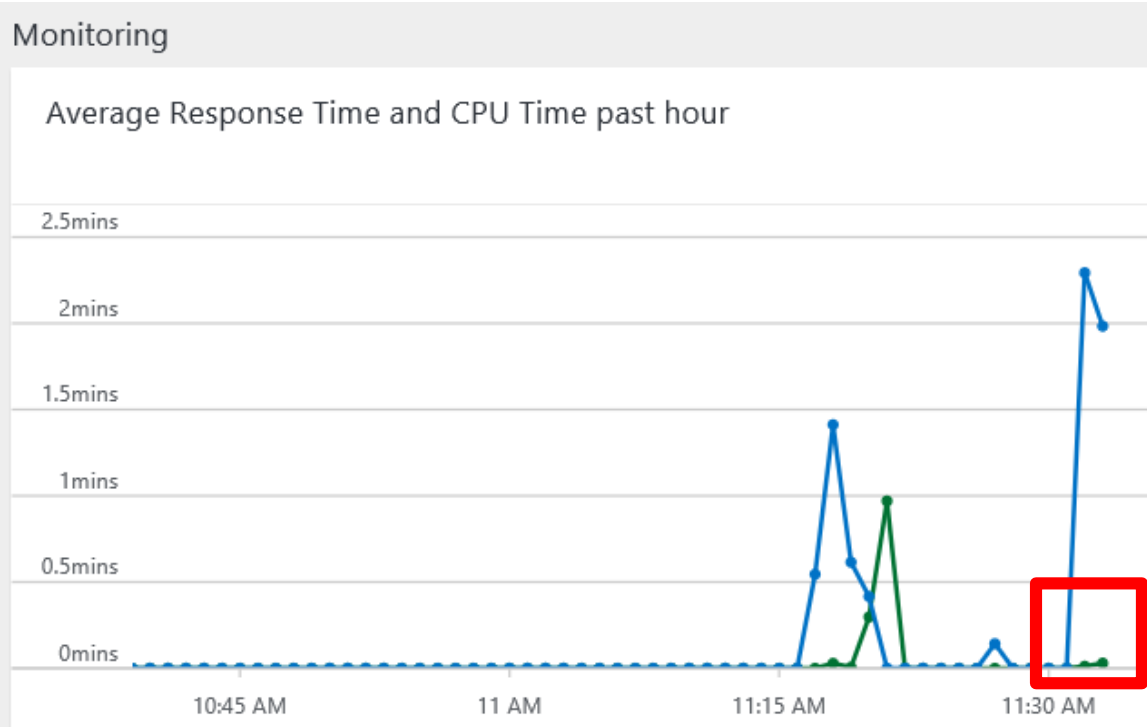
## DB Performance (*“S1” tier – 20 DTUs*)

DTU percentage past hour



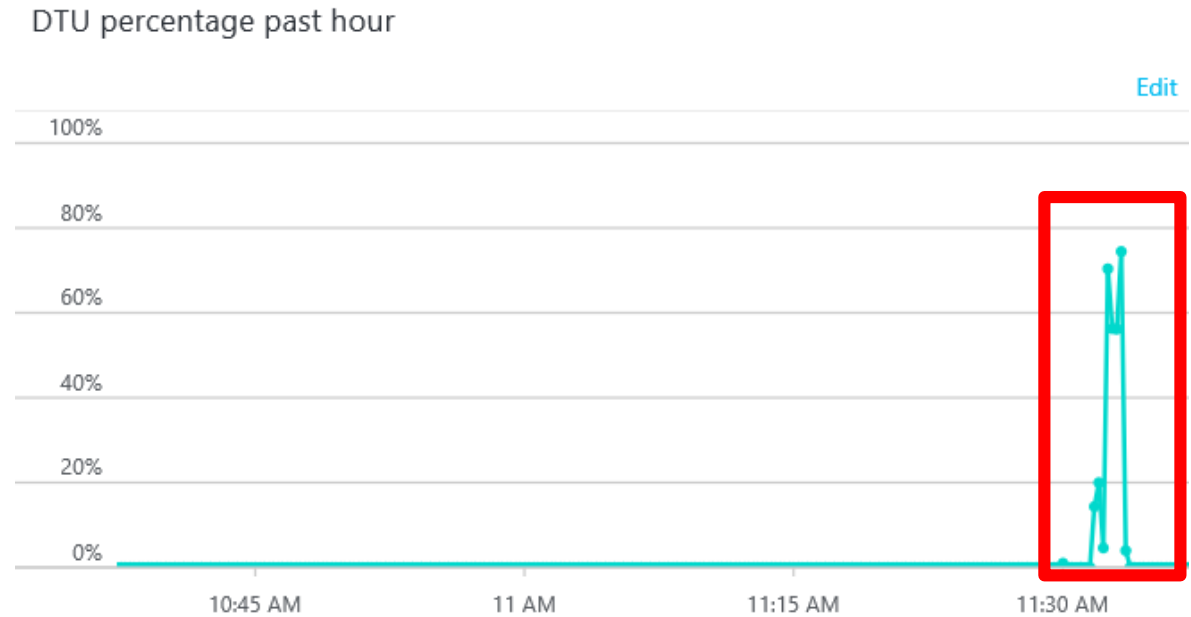
# 50 concurrent users, 2 minutes duration

## Web App Performance (*“Shared” tier*)



AVERAGE RESPONSE TIME  
**1.78<sub>s</sub>**

## DB Performance (*“S2” tier – 50 DTUs*)



# Know your web service plan limits...

	Free	Shared	Basic	Standard	Premium
Apps per Service Plan	10	100	Unlimited	Unlimited	Unlimited
Storage	1 GB	1 GB	10 GB	50 GB	500 GB
CPU time	60 minutes	240 minutes	Unlimited	Unlimited	Unlimited
CPU Cores	Shared	Shared	1 to 4	1 to 4	1 to 8
RAM	1 GB	0.5 GB	1.75 GB to 7 GB	1.75 GB to 7 GB	1.75 GB to 14 GB

## **More at:**

- <https://azure.microsoft.com/en-us/documentation/articles/azure-subscription-service-limits/#app-service-limits>
- <https://azure.microsoft.com/en-us/pricing/details/app-service/>

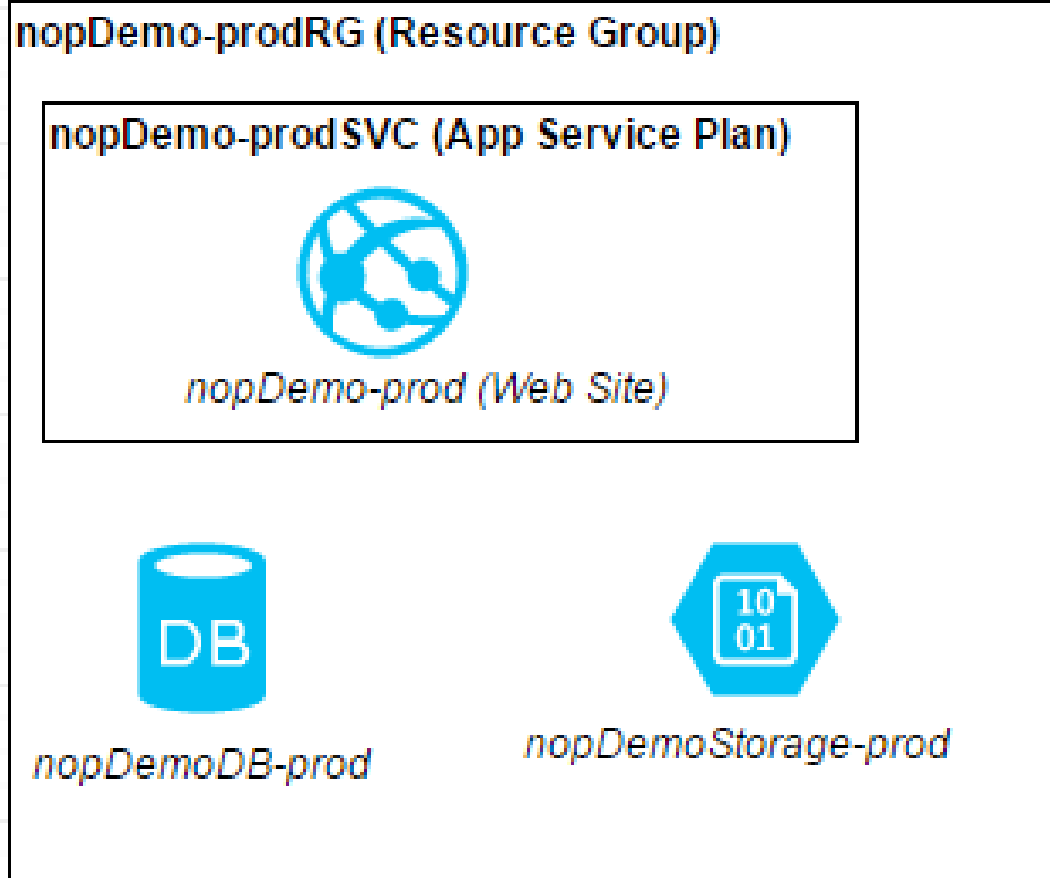
# Know your web service plan limits...

	Free	Shared	Basic	Standard	Premium
Apps per Service Plan	10	100	Unlimited	Unlimited	Unlimited
Storage	1 GB	1 GB	10 GB	50 GB	500 GB
CPU time	60 minutes	240 minutes	Unlimited	Unlimited	Unlimited
CPU Cores	Shared	Shared	1 to 4	1 to 4	1 to 8
RAM	1 GB	0.5 GB	1.75 GB to 7 GB	1.75 GB to 7 GB	1.75 GB to 14 GB

## More at:

- <https://azure.microsoft.com/en-us/documentation/articles/azure-subscription-service-limits/#app-service-limits>
- <https://azure.microsoft.com/en-us/pricing/details/app-service/>

# Working environment



- 1 Web App -> S2 Tier (~125 €/mo)
- 3DBs -> Basic Tier (3 x ~4 €/mo = 12 €/mo)
- Storage -> (~0.02 €/mo per 1GB)

# Working environment

nopDemo-prodRG (Resource Group)

nopDemo-prodSVC (App Service Plan)



*nopDemo-prod (Web Site)*



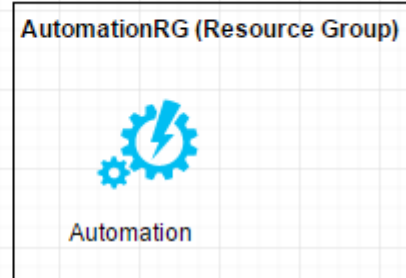
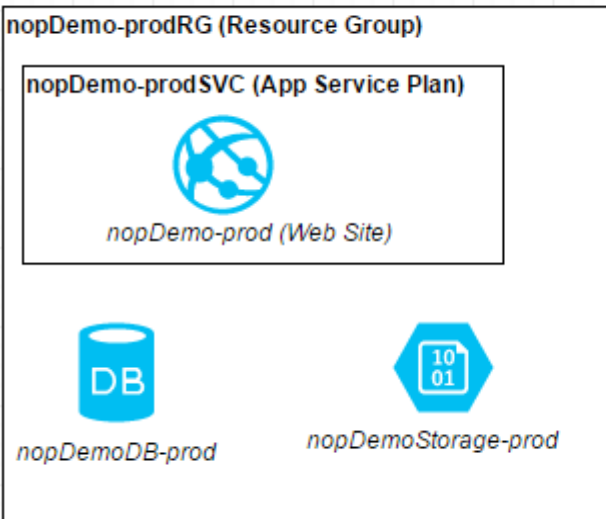
*nopDemoDB-prod*



*nopDemoStorage-prod*

- 1 Web App -> S2 Tier (~**125 €/mo**)
- 3DBs -> Basic Tier (3 x ~4 €/mo = **12 €/mo**)
- Storage -> (~0.02 €/mo per 1GB)

# Working environment - **Optimized**



- **Web Apps -> Free + Shared Tier (~8 €/mo)**
- **DB -> Basic Tier (~4 €/mo)**
- **Storage -> (~0.02 €/mo per 1GB)**
- **Automation -> (~2 €/mo)**
- **Scheduler (~12 €/mo)**



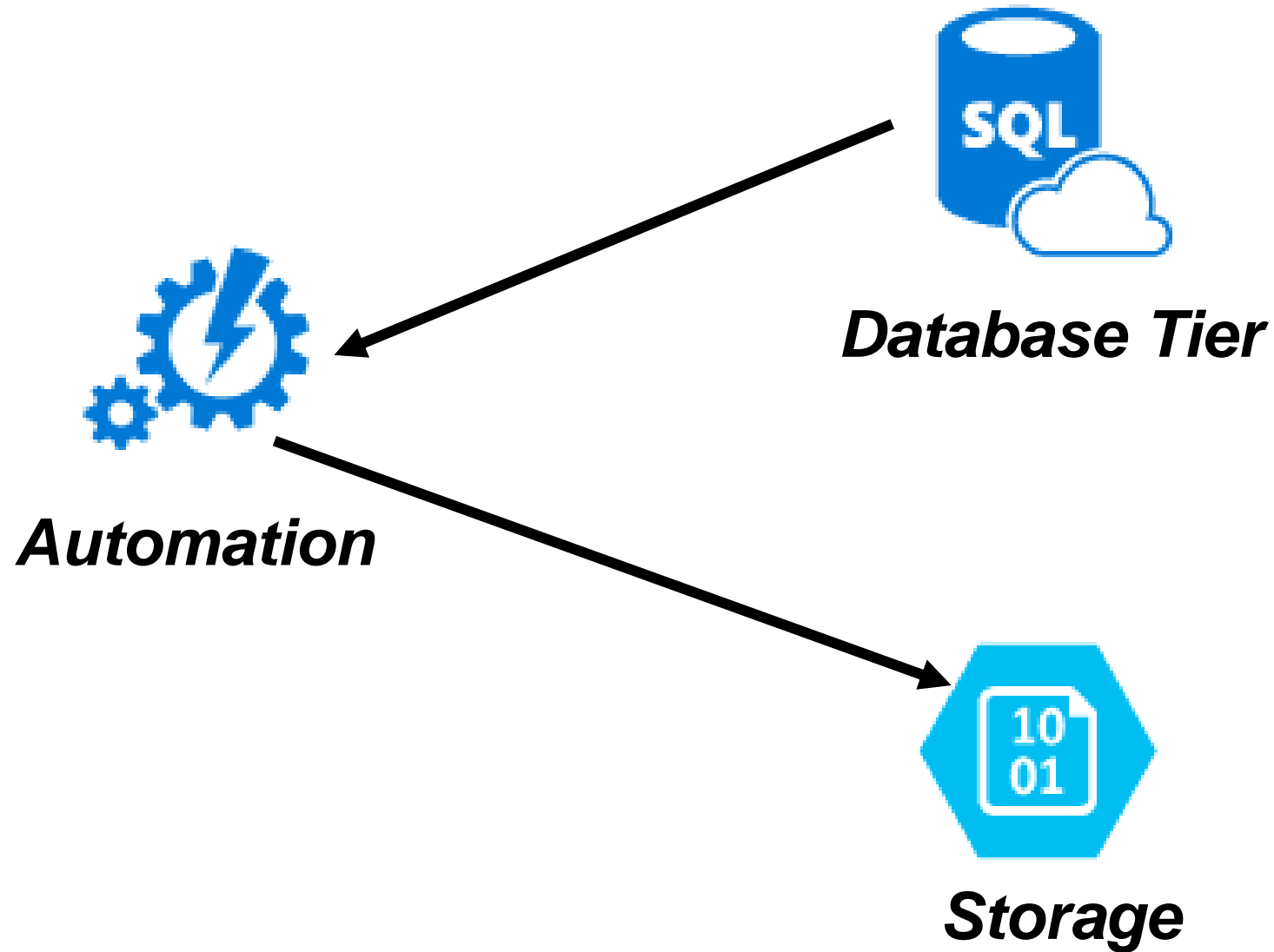
A wide-angle photograph of a paved road winding through a hilly landscape at sunset. The sun is low on the horizon, casting a warm, golden glow over the scene. The sky is filled with wispy clouds, and a few birds are visible in flight. On the left, a grassy hillside rises, with several people silhouetted against the sky at its peak. A person in a light blue shirt is walking away from the camera on the road. A white guardrail runs along the right side of the road. The overall mood is peaceful and inspiring.

**Let's walk another mile 😊**

***...and see some other tips and tricks***

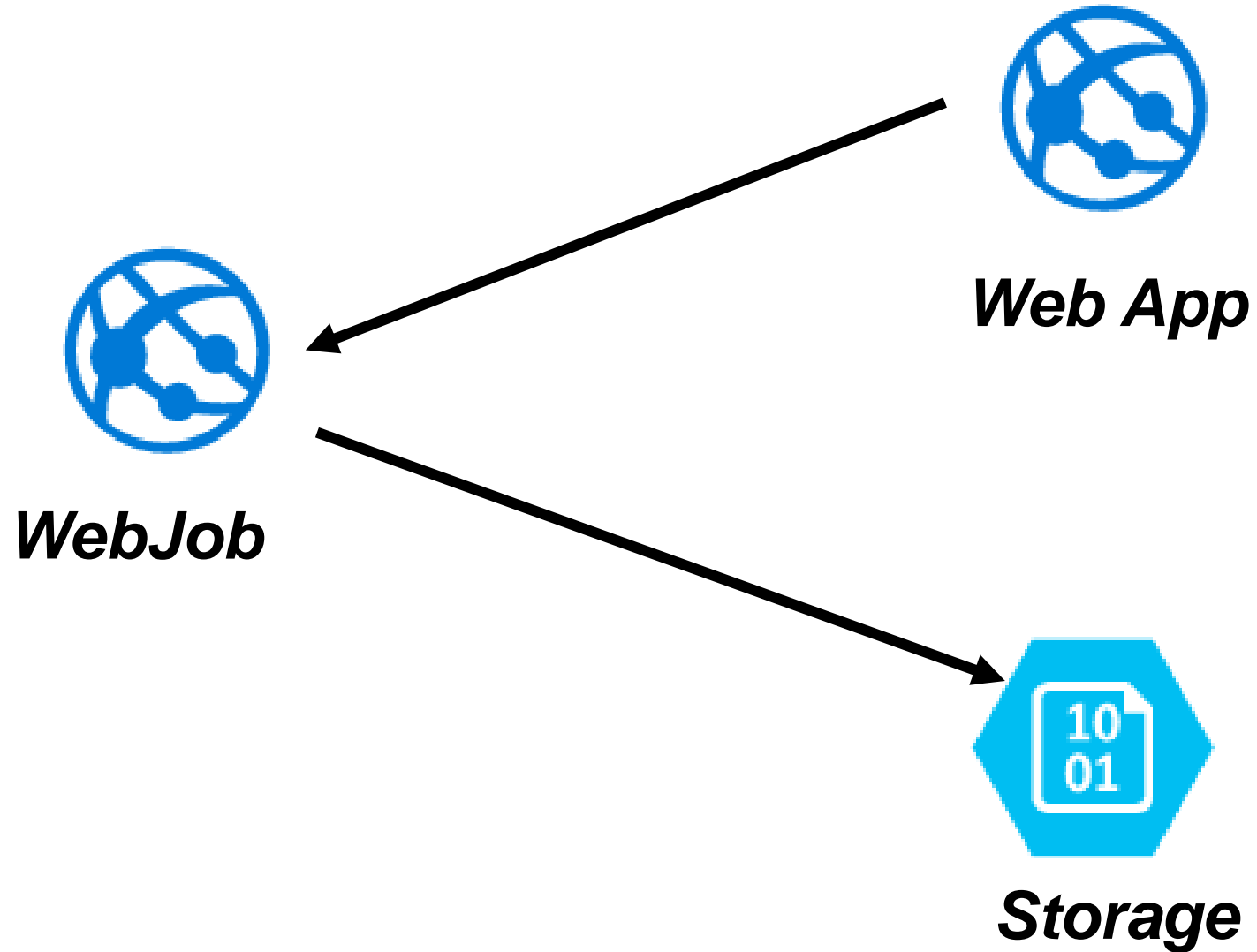
# Automate DB Exports

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# Background file backups

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# Application Insights

## Slowest Requests (past 24 hours)

REQUEST NAME	DURATION (95TH)
GET Home/Index	13.90 s
GET Customer/Login	7.21 s
GET Product/NewProducts	4.38 s
GET News/List	1.32 s

## Live Stream



# **...and more to play with**

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- **Resource Group distribution**
- **WebHooks**
- **Resource manager templates**
- **And....**

**Let's not forget the alerts!**



# Takeaways

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- **Don't just deploy an app, decide the architecture beforehand**
- **Careful with Database capacity (kind of a bottleneck)**
- **Know the limits of your tier**
- **Take advantage of side Azure services to make your life easier**





Thank you! 😊