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DEPLOYING AND MANAGING DYNAMICS NAV 2016 WITH AZURE SQL DATABASE

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(NPS)

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INTRODUCTION – ALEKSANDAR TOTOVIC

- 10+ years in NAV world
- ERP Consulting Director @ NPS
- Editor in Chief @ ERP Magazine
- MVP – Microsoft Dynamics NAV
- How Do I & Courses Authors
- Blog:
 - Totovic NAV Blog
 - <http://totovic.com/>
- Contact:
 - Mail: aleksandar.totovic@nps.rs
 - Twitter: @atotovic

AGENDA

NAV on Azure
Architecture



Manually
Deploying and
Managing NAV
on Azure Using
Azure SQL



Server and Clients
Configuration



Scaling Azure
SQL Database



Deploying and
Using NAV on
Azure Using
Management
Service Portal



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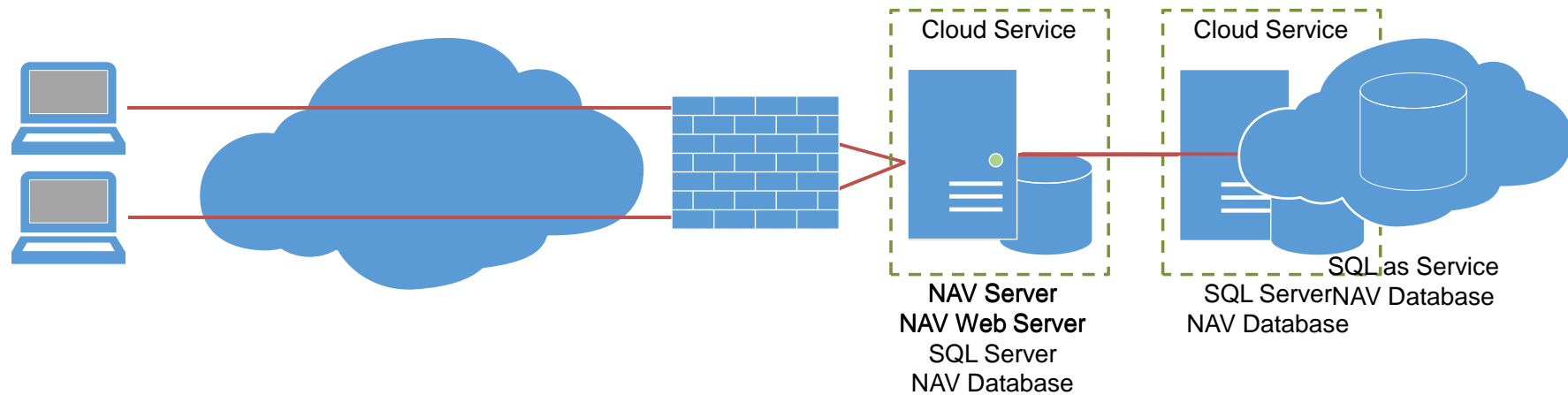
NAV on Azure Architecture



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NAV ON AZURE – ARCHITECTURE



WHY TO USE AZURE SQL SERVER?

- Easier for using
- Better Price
- Less Initial Costs
- Pay only for what you use
- Better Scalability
- ...

WHY TO USE AZURE SQL SERVER?

 **SQL Database**


REGION: North Europe TYPE: Single Database

PRICING TIER: Standard

INSTANCE SIZE: S0 10 Data throughput units 250 GB Database \$0.020/hr

NOTE:
S3 is now generally available (except in Australia regions). GA price below will be effective on April 1, 2015. A 50% preview discount will continue to be applied through March 31, 2015. Australia regions will continue to receive 50% preview discount until further notice.

1 Databases × 744 Hours = \$15.03/mo

 **Virtual Machines** ^{*) + SQL License}

REGION: North Europe TYPE: SQL Server

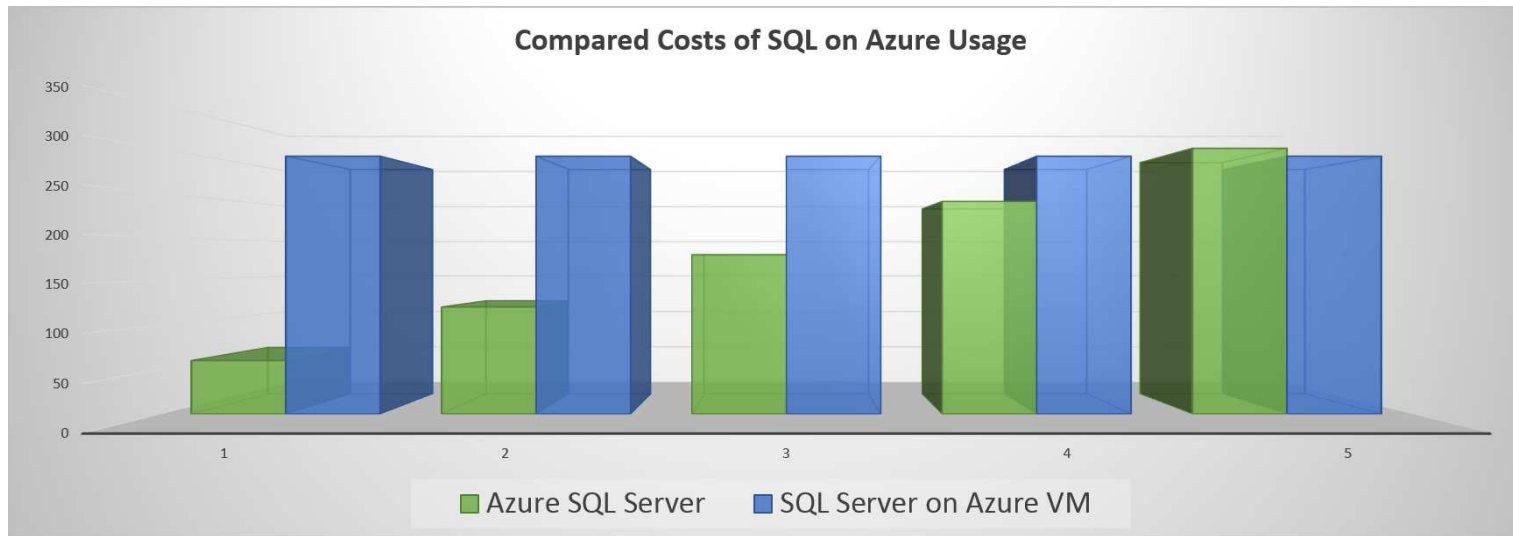
PRICING TIER: Standard LICENSE: SQL Web

INSTANCE SIZE: A3 HDD 4 cores 7 GB RAM 285 GB disk \$0.392/hr

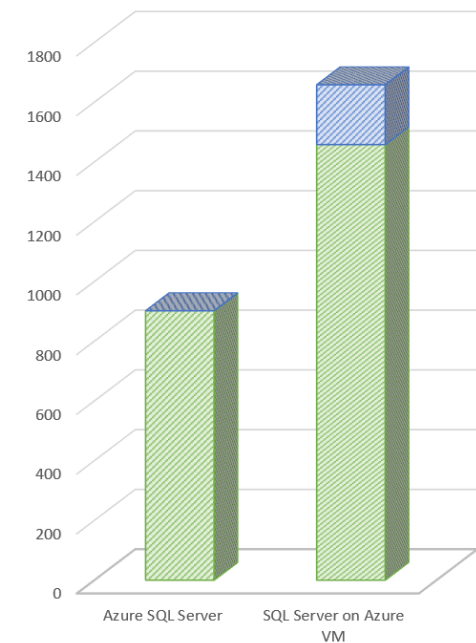
1 Virtual Machines × 744 Hours = \$291.65/mo^{*)}

- Example: each month 4 new clients (after 5 months – the same cost)
- Compare monthly and total cost

WHY TO USE AZURE SQL SERVER?



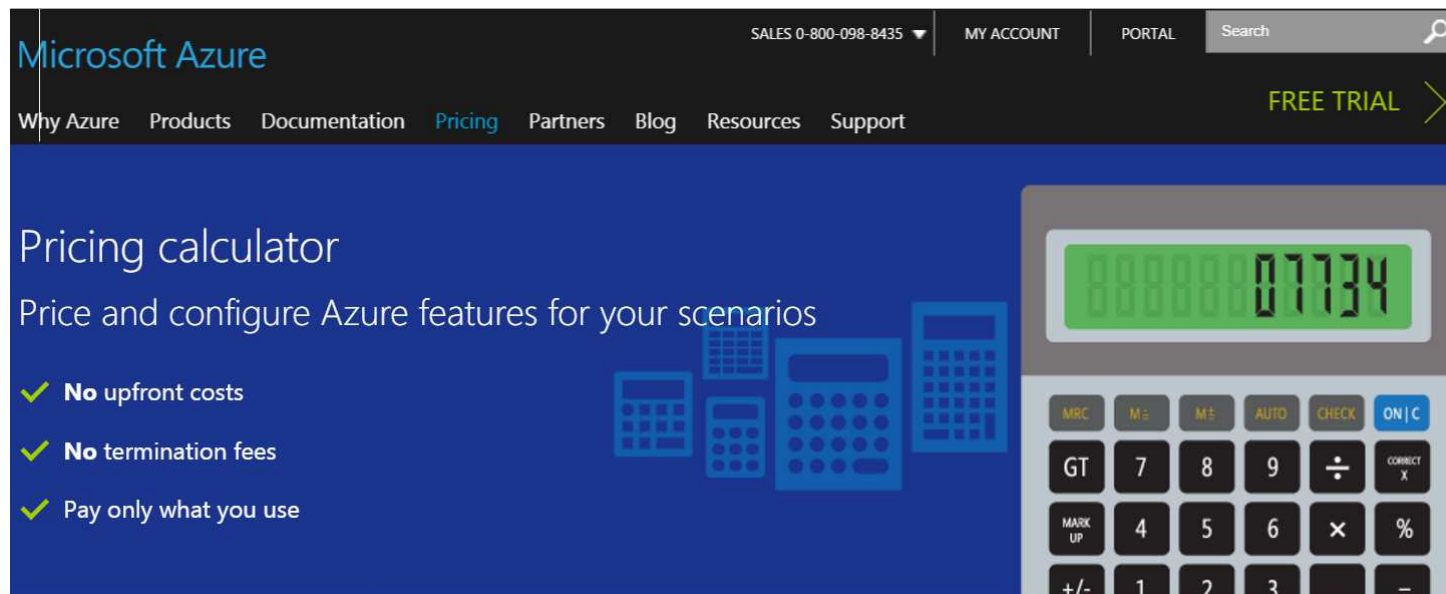
TOTAL COSTS AFTER 5 MONTHS



- Total Cost of Azure SQL Server: **901,80**
- Total Cost of SQL Server on Azure VM: **1.458,25** *) + SQL License

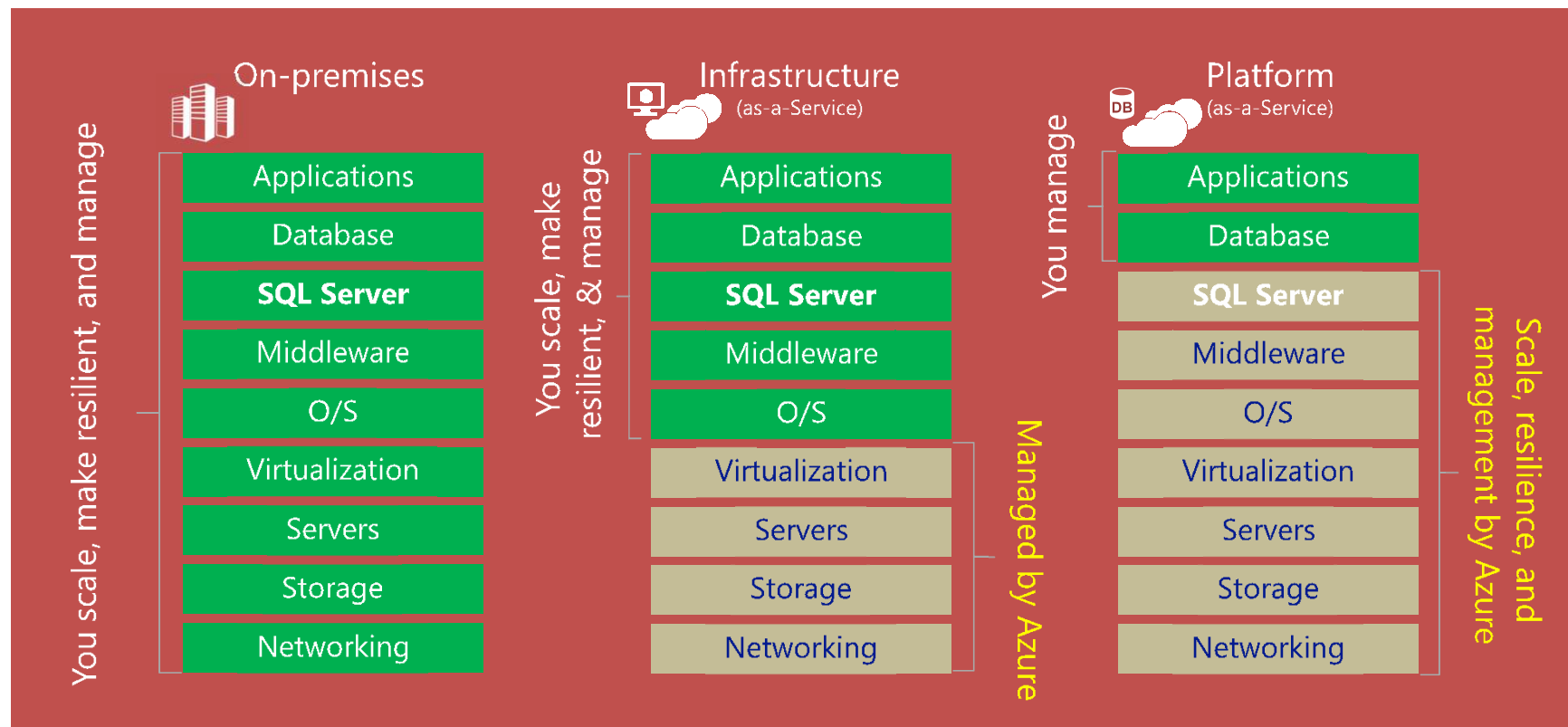
MAKE OWN CALCULATION

<https://azure.microsoft.com/en-us/pricing/calculator/>



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SQL MODEL COMPARING



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NAV on Azure Architecture



Manually Deploying and Managing NAV on Azure Using Azure SQL



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CREATE NEW AZURE SQL SERVER

- Microsoft Azure Portal: <https://manage.windowsazure.com>
- Create Azure SQL Server
- Add Allowed
- Create a Full
- Deploy Data

Microsoft Azure | CREDIT STATUS

sql databases

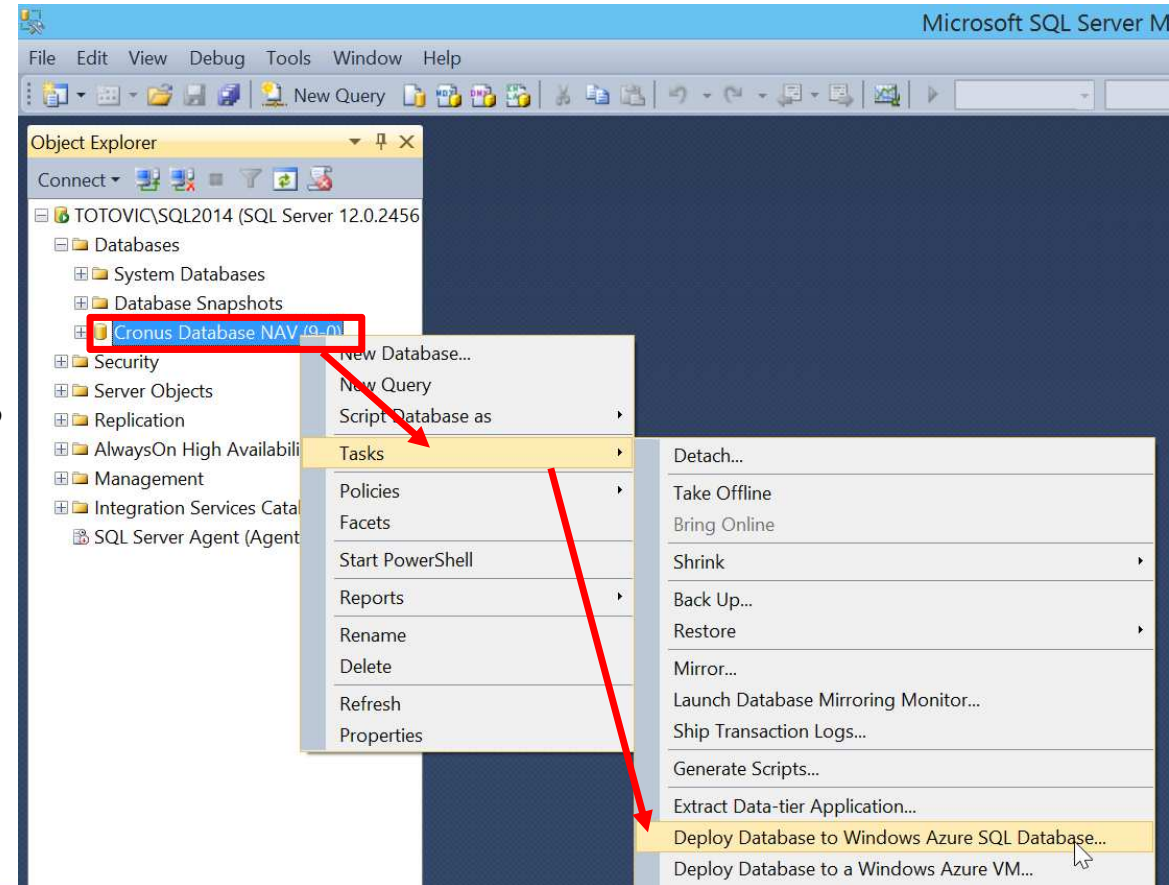
DATABASES SERVERS DELETED DATABASES

NAME	STATUS	LOCATION	SUBSCRIPTION	AVAILABLE QUOTA	V12 (LATEST SQL DA...
dxgk4rjg4c	Ready	North Europe	Visual Studio Ultimate with...	2000 DTUs	
t3b9mjeops	Ready	North Europe	Visual Studio Ultimate with...	14950 DTUs	Enabled

ALL ITEMS
WEB APPS 0
VIRTUAL MACHINES 12
MOBILE SERVICES 0
CLOUD SERVICES 12
BATCH SERVICES 0
SQL DATABASES 1
STORAGE

DEPLOYMENT NAV 2016 DATABASE ON AZURE SQL SERVER - WIZARD

- Microsoft SQL Management Studio
- Find NAV Database Source
- Delete All Windows Users
- Deploy Database to Windows Azure SQL DB
- Connect to Azure SQL Server
- Setting up Azure SQL Parameters
- Checking Results in:
 - Management Studio
 - Azure Portal



POTENTIAL DATABASE DEPLOYMENT ISSUE IN SQL DEPLOYMENT WIZARD

- ISSUE: You can only select the obsolete service tiers of Azure SQL Database, Web and Business, with a maximum database size of 150 gigabytes (GB).

There is no option to select the new service tiers, Basic, Standard and Premium.

- This issue occurs because SSMS 2014 is not updated to match the current service tier offerings. This issue was first fixed in the Cumulative Update 5 for SQL Server 2014.

Cumulative update package 5 for
SQL Server 2014

 [Email](#)

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Hotfix Download Available

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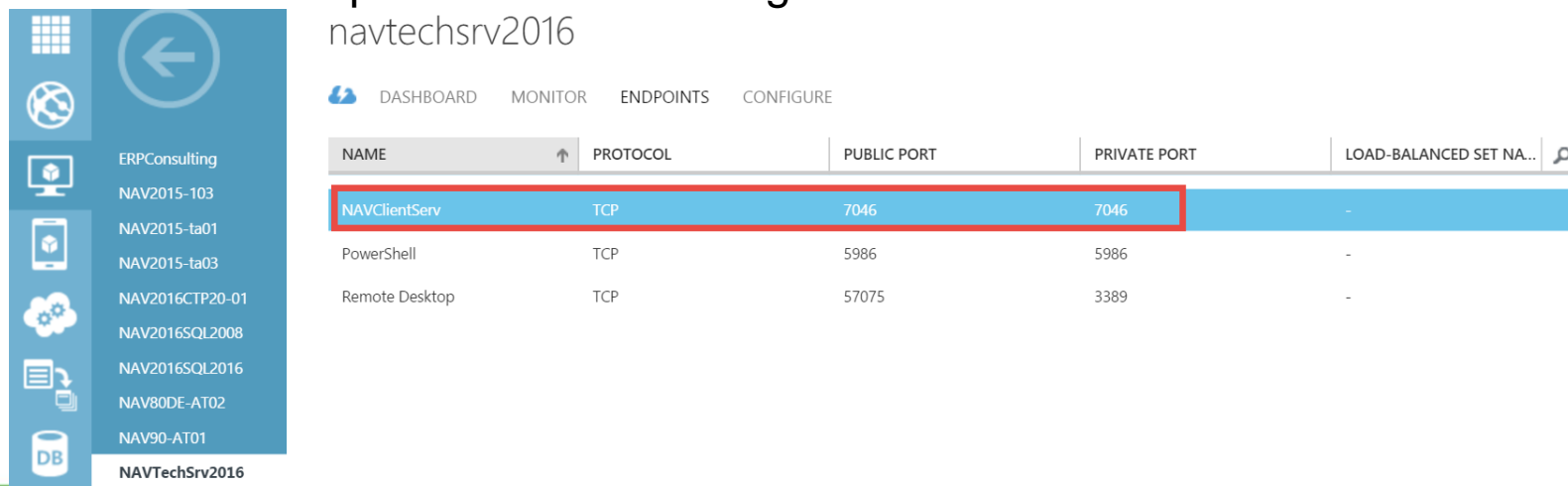
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CREATE AZURE VM FOR NAV SERVER

- Microsoft Azure Portal
- Create New Virtual Machine with Only Windows Server
- Copy Microsoft Dynamics NAV 2016 Installation DVD to Azure VM
- Install Only NAV Server Tier (minimum)
- Or... Use Microsoft Dynamics NAV 2016 Image from Gallery

OPEN CLIENT SERVICES PORT ON THE AZURE VM

- Microsoft Azure Portal
- Go to Azure Virtual Machine
- Create New Endpoint for External Login



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DASHBOARD MONITOR ENDPOINTS CONFIGURE

NAME	PROTOCOL	PUBLIC PORT	PRIVATE PORT	LOAD-BALANCED SET NA...
NAVClientServ	TCP	7046	7046	-
PowerShell	TCP	5986	5986	-
Remote Desktop	TCP	57075	3389	-

REGISTER IP ADDRESS OF THE SERVER VM ON AZURE SQL SERVER

- If you have to connect to Azure SQL Server with external computers
- Manually adding computer name and IP address

Microsoft Azure | CREDIT STATUS

t3b9mjeops

DASHBOARD DATABASES CONFIGURE HISTORY BACKUPS AUDITING & SECURITY

allowed ip addresses

CURRENT CLIENT IP ADDRESS 46.240.233.91 ADD TO THE ALLOWED IP ADDRESSES.

RULE NAME	START IP ADDRESS	END IP ADDRESS
ClientIPAddress_2015-11-13_10:17:37	80.93.243.173	80.93.243.173
ClientIPAddress_2015-11-14_13:37:36	46.240.233.91	46.240.233.91
NAVTechSrv2016	40.113.82.121	40.113.82.121

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CONFIGURE THE NAV SERVER TIER

- Login to Azure VM Using Remote Desktop Connection
- Run PowerShell ISE as Administrator
- Use PowerShell Script from
<https://blogs.msdn.microsoft.com/nav/2015/10/09/hdi-set-up-nav-with-azure-sql-database-3/>
- Change Parameters in Script
- Run Script

CONFIGURE THE NAV SERVER TIER

CHECKING RESULTS

- Created Key to Encrypt the Credentials Stored in the NST Configuration File and Add Key to NAV Instance
- Configured Microsoft Dynamics NAV 2016 Administration Tool
 - Database Name
 - Database Server
 - Database Credentials
 - Enabled Encryption on SQL Server Connections
 - Restarted Service to Apply New Settings
- Imported License File into Azure SQL Database

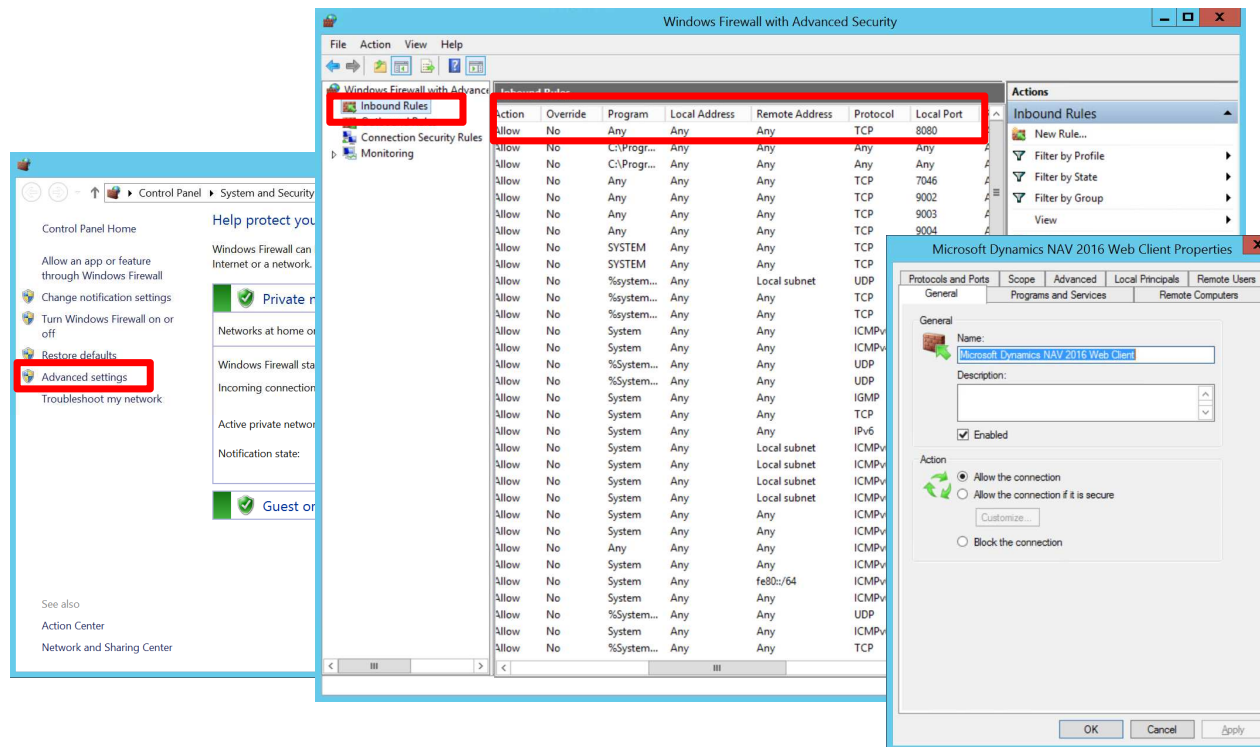
CONFIGURE THE NAV 2016 WINDOWS CLIENT

- Install Microsoft Dynamics NAV 2016 Windows Client
 - TRUNCATE TABLE "User Personalization";
 - TRUNCATE TABLE "User Property";
 - TRUNCATE TABLE "Access Control";
 - TRUNCATE TABLE "User";
- Run Microsoft Dynamics NAV 2016 Windows Client

CONFIGURE THE NAV 2016 WEB CLIENT

- Web Server Component is Already Installed
- Create Endpoint for Web Client on Azure VM > HTTP: 8080
- Login with different username from local computer:
 - Use Administration Username on Azure VM
 - Create the same Local User on Local Computer and on Azure VM
- Type: `http://<AzureVM_Name>.cloudapp.net:8080/DynamicsNAV90/WebClient/`
- If any problem with connection, check if port 8080 is not opened

CHECK IF PORT IS NOT OPENED



- Control Panel > Windows Firewall
- Advanced Settings > Inbound Rules
- Microsoft Dynamics NAV 2016 Web Client
- Check Local Port
- If Not, change Properties or create New Rule

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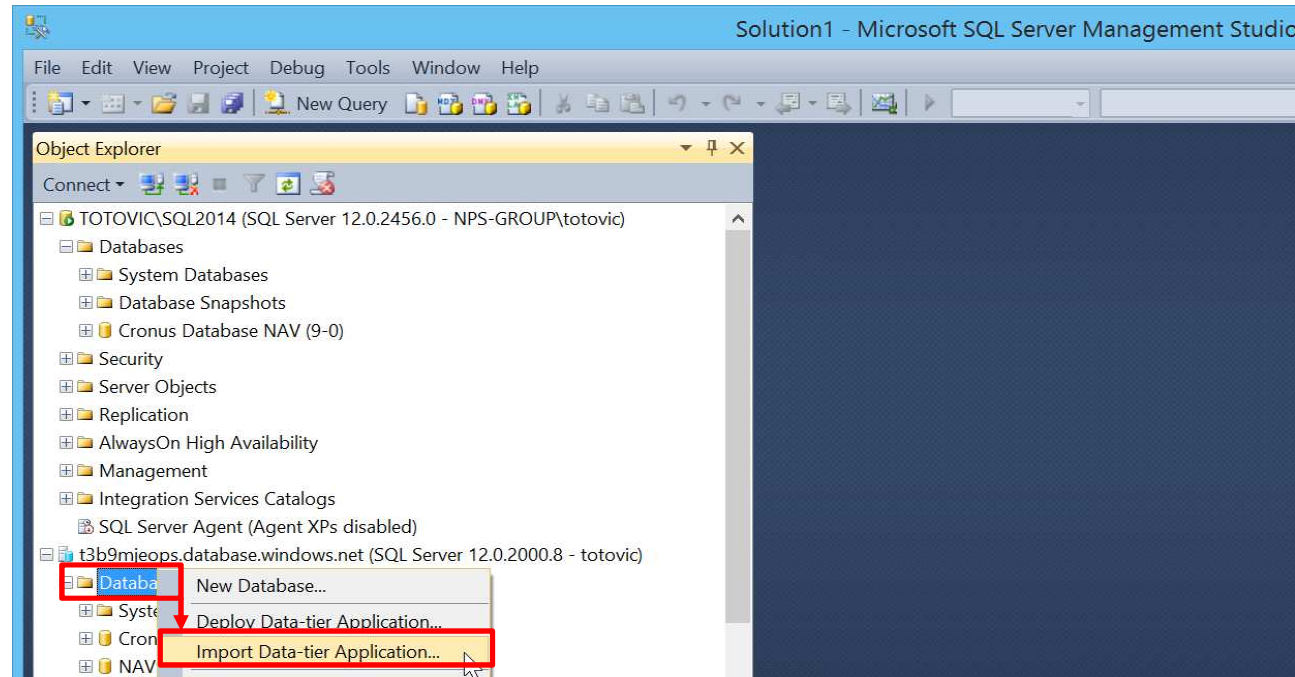
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DEPLOYMENT NAV 2016 DATABASE ON AZURE SQL SERVER CREATING BACPAC FILES

- Microsoft SQL Management Studio
- Find NAV Database Source
- Delete All Windows Users
- Extract Data-tier as BACPAC File
- Connect to Azure SQL Server
- Import Data-tier as BACPAC File
- Checking Results in:
 - Management Studio
 - Azure Portal



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SCALING AZURE SQL DB

- Scaling Service Tier: Basic, Standard, Premium
- Performance Levels and Max Size
- Service tiers for single databases
- Service tiers for elastic database pools

	Basic	Standard	Premium
Max DB size	2 GB	250 GB	500 GB
eDTU max per database	5	100	1,000
Max DBs per pool	200	200	50
eDTU range per pool	100 - 1,200	100 - 1,200	125 - 1,500
Included storage per eDTU	.097 GB	1 GB	0.5 GB
Storage range per pool	9.77 - 117.18 GB	100 - 1,200 GB	67 - 750 GB
Point-in-time restore	Any point last 7 days	Any point last 14 days	Any point last 35 days
Disaster recovery	Geo-Restore, restore to any Azure region	Standard Geo-Replication, offline secondary	Active Geo-Replication, up to 4 online (readable) secondary backups
Max concurrent requests per pool	200 - 2,400	200 - 2,400	200 - 2,400
Max sessions per pool	2,400 - 28,800	2,400 - 28,800	2,400 - 28,800

* In-Memory OLTP storage limits will soon adjust to 4 for P4 and 14 for P11.

PRICES COMPARATION

Premium

eDTUs PER POOL	MAX STORAGE PER POOL ***	MAX DBs PER POOL **	MAX eDTUs PER DATABASE	PRICE *
125	63 GB	50	125	\$0.937/hr (~\$697/mo)
250	125 GB	50	250	\$1.88/hr (~\$1,399/mo)
500	250 GB	50	500	\$3.75/hr (~\$2,790/mo)
1000	500 GB	50	1000	\$7.50/hr (~\$5,580/mo)
1500	750 GB	50	1000	\$11.25/hr (~\$8,370/mo)

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SCALING AZURE SQL DB

- Understanding DTUs
 - Single Databases
 - Elastic Database Pools
- Use Azure SQL Database DTU Calculator:
<http://dtucalculator.azurewebsites.net/>



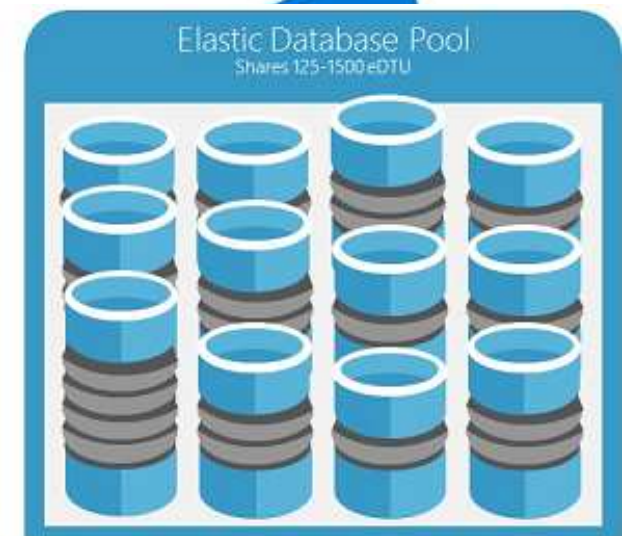
Auto-scale up to 5 eDTUs per DB

Basic



Auto-scale up to 100 eDTUs per DB

Standard



Auto-scale up to 1000 eDTUs per DB

Premium

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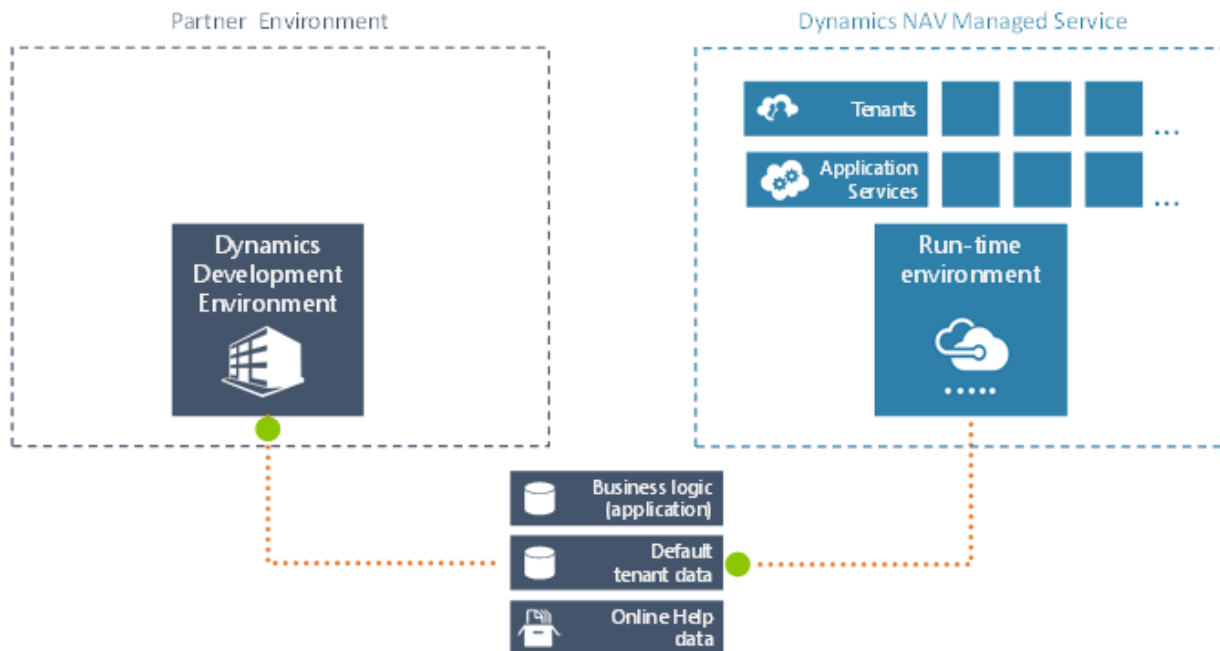
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USING OF MANAGEMENT SERVICE PORTAL



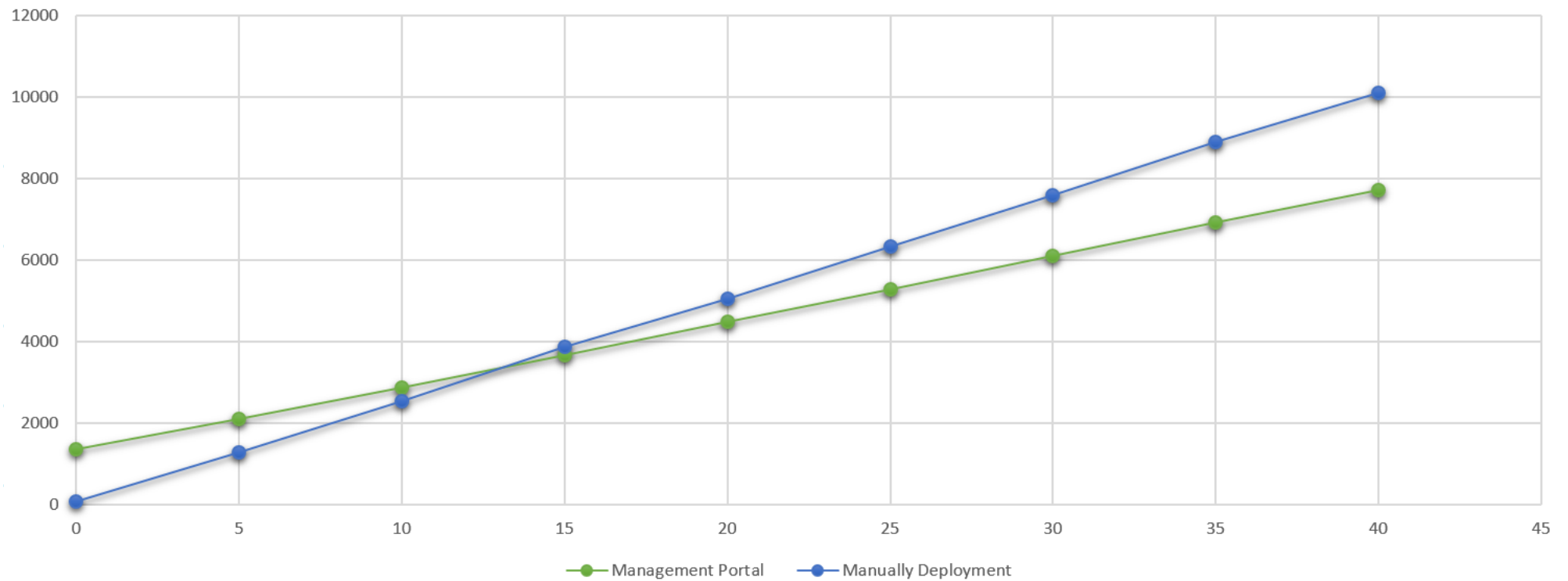
- Self-service portal of the Dynamics NAV Managed Service
- Deploying and managing enterprise applications on the Microsoft Azure
- Only Microsoft Dynamics NAV 2016

Your Own Development Environment

- Business Logic (Application Database)
- Default Business Data (Tenant Database)
- Online Help Content

COMPARISON

Comapred Costs of NAV on Azure



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SESSION SUMMARY

Introduction in NAV on Azure Infrastructure

Creating New Azure SQL Server

Deployment Complete NAV 2016 Database on Azure SQL Server Using Wizard

Deployment NAV 2016 Database on Azure SQL Server Using Extract and Import Data-tier Application

Issues in Deployment Process

Create Azure VM for NAV Server

Open Client Service Port on the Azure VM

Register IP Address of the Server VM on Azure SQL Server

Configure the NAV Server Tier

Configure the NAV 2016 Windows Client

Configure the NAV 2016 Web Client

Scaling Azure SQL Database

Understanding DTUs

Using of Management Service Portal

SESSION AND SPEAKER DETAILS

All scripts will be available on my blog next week.

My Blog: **totovic.com**

Twitter: **[@atotovic](https://twitter.com/atotovic)**

Mail: **aleksandar.totovic@nps.rs**

Any Questions?

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THANK YOU

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LUNCH BREAK

see you back in 60 min.

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