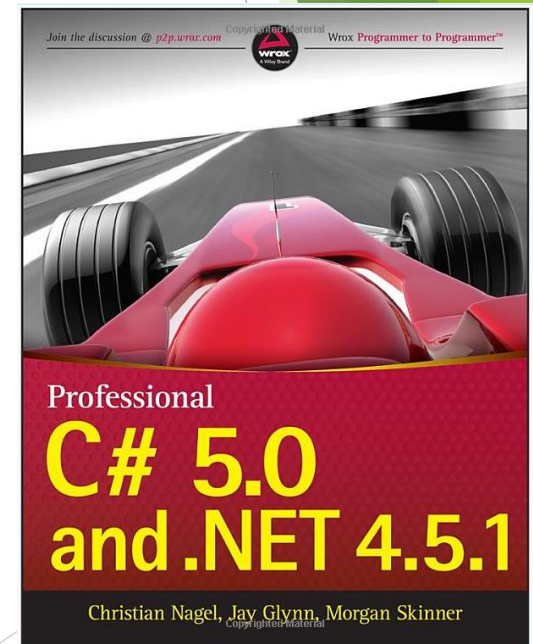# Christian Nagel
CN innovation

Windows Azure: Welche Storage Technologie soll ich jetzt verwenden?

Christian Nagel

- ▶ Training, Coaching, Consulting
- ▶ Microsoft Regional Director
- ▶ Microsoft MVP .NET

- ▶ XAML + C#
- ▶ Windows Azure
- ▶ ASP.NET MVC + Web API

Goals

- Einführung in Windows Azure Storage Technologien (PaaS)

- Code Beispiele

- Szenario: Multi-Tenant Menu Card Manager

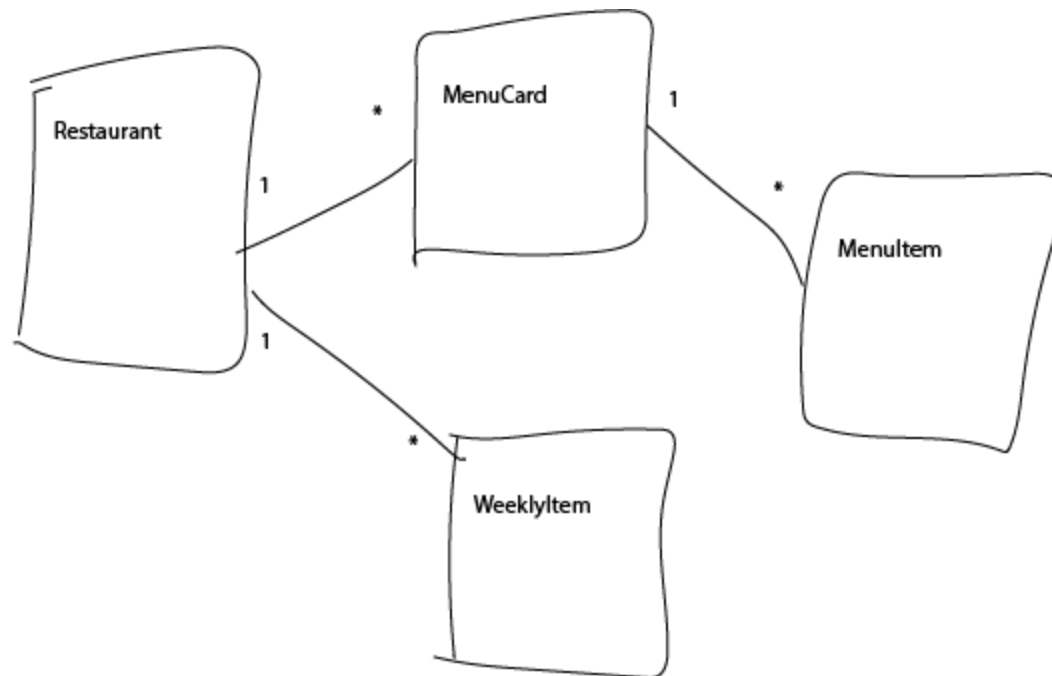# Agenda – 5 Steps

SQL Database

Storage

DocumentDb

Azure Search

Vergleiche

SQL Database

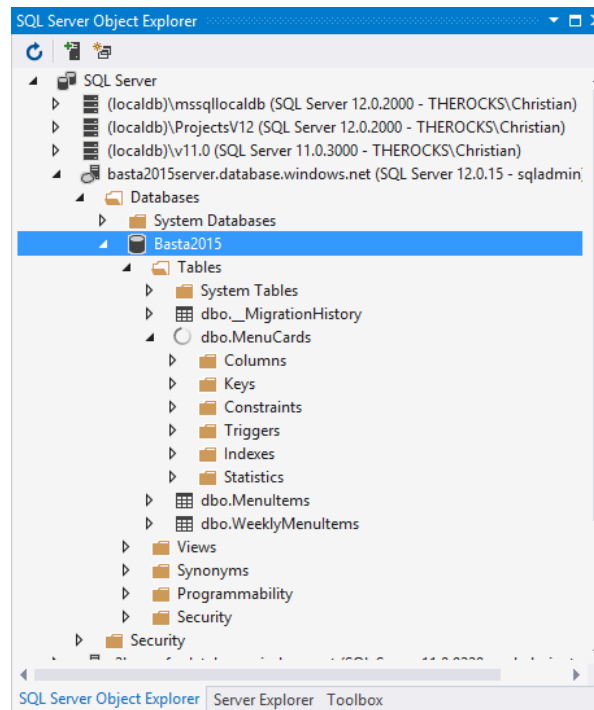# Overview SQL Database

▶ Relational Store

▶ "Just like" SQL Server

APIs

- ADO.NET
- Entity Framework 7
  - Code First
  - Conventions, no Magic
  - Smaller Packages
  - Memory Provider
  - NoSQL

Demo
SQL Database

- ▶ Visual Studio
- ▶ Entity Framework
- ▶ Relations
- ▶ Resiliency

Unterschiede zu On-Premise

- ▶ Resiliency

- ▶ Database Throughput Unit (DTU)
  - ▶ CPU
  - ▶ Physical Data Reads
  - ▶ Log Writes

Limits / Scalability

- Premium Tier
  - 800 DTUs
  - Max DB Size 500 GB
  - 1600 Worker Threads
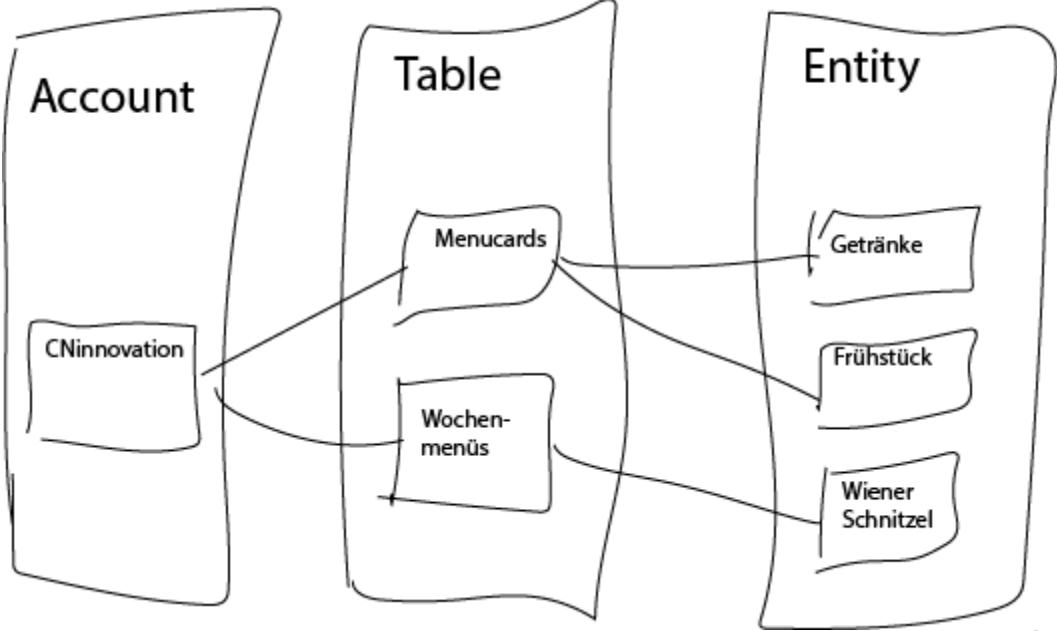 - 19200 Sessions
  - 735 Transactions per Second

Azure Storage

Overview Azure Storage

▶ Table Storage

▶ Blob Storage

  ▶ Page blob

  ▶ Block blob

▶ Queues

▶ Files

Table Storage

▶ Server Explorer

▶ Table Design

▶ Add/Update

▶ Fluent & Queryable Queries

Demo
Table Storage

Table Storage Eigenschaften

- ▶ 255 Properties
- ▶ 1 MB per Entity
- ▶ 64k per String
- ▶ Wenig Datentypen
- ▶ Keine Relationen
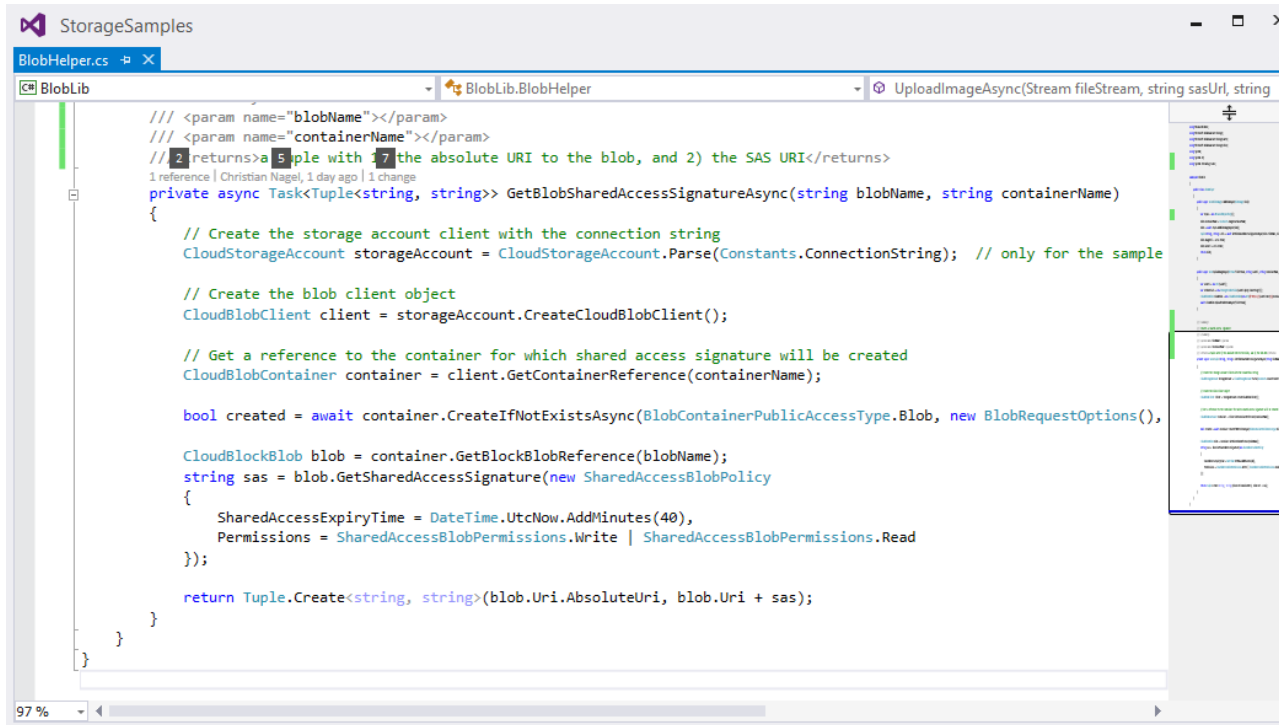- ▶ Index nur PartitionKey/RowKey
- ▶ 1 KB RowKey

Blob Storage

▶ Shared Access Signature

Demo
Blob Storage

Blob Storage Eigenschaften

- Shared Access Signatures
- 200 GB Block Blob
- 1 TB Page Blob

- 500 TB per Account (50 Accounts per Subscription)

Verfügbarkeit

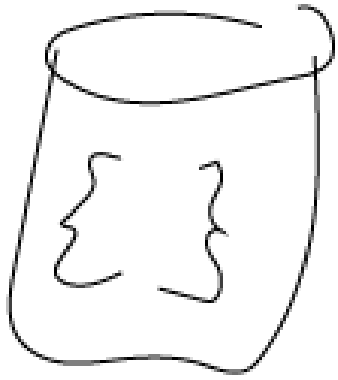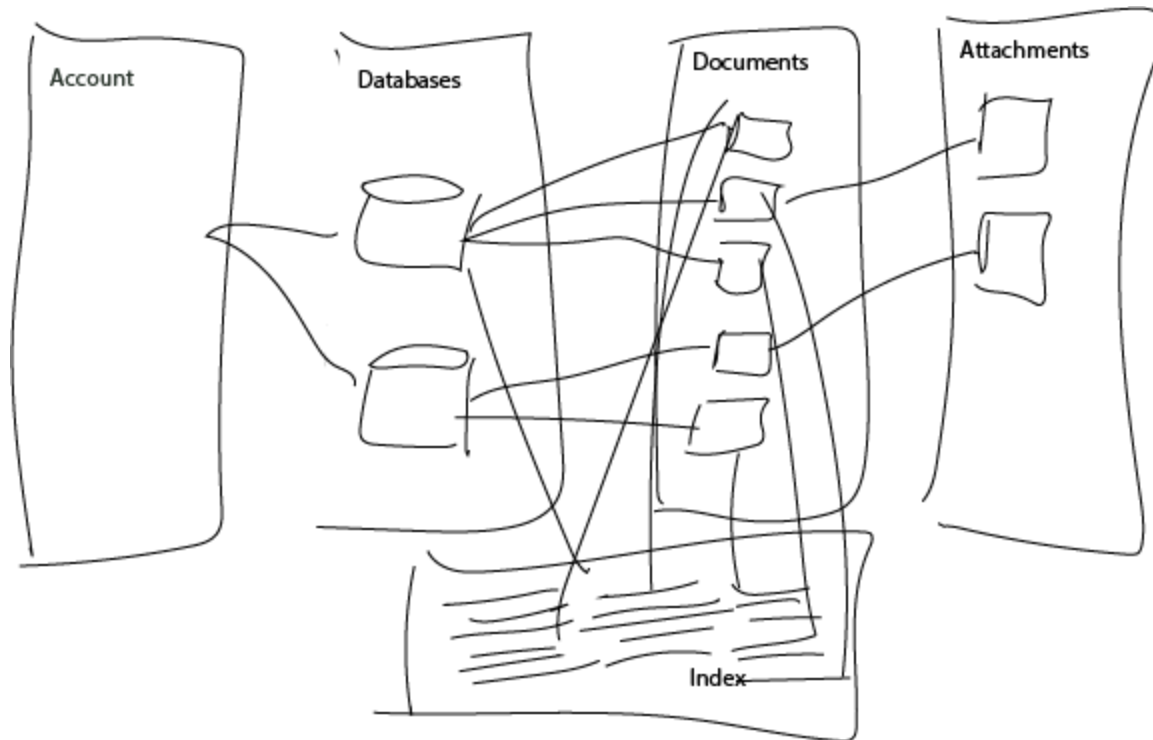| Locally redundant Storage (LRS)	• 3 Kopien • In 1 Zone
Zone-redundant Storage (ZRS)	• 3 Kopien • 2 oder 3 Zonen
Geo-redundant Storage (GRS)	• 3 + 3 Kopien • 2 Regionen
Read-access geo-redundant (RA-GRS)	• 3 + 3 Kopien • Read Access 2 Regionen

DocumentDB

Overview DocumentDB

- Schema-free data
- Queries with SQL Syntax
- Stores JSON documents
- Consistency levels for performance

DocumentDB

- Collections
- Index
- Documents
- Query

Demo
DocumentDB

Consistency Levels

- ▶ Strong
- ▶ Bounded staleness
- ▶ Session
- ▶ Eventual

Document Collections

- Collection of JSON documents
- Boundary for queries and transactions
- Users/permissions for databases or collections
- Elastic SSD backed storage
- SQL Query Language

Features

▶ Stored Procedures

▶ Triggers

▶ User Defined Functions

▶ using JavaScript

Limits

- ▶ 5 Database Accounts*
- ▶ 100 Collections per Account*
- ▶ 2 GB Attachment Storage per Account
- ▶ 0-10 GB for One Collection
- ▶ 512 KB Max Size for Document and Attachment
- ▶ 1 MB Max Response Size
- ▶ Max 5 AND per query*
- ▶ Max 5 OR per query*

- ▶ *) ask support for more

Azure Search

Overview

- People love search
- Windows Azure Service
- Independent of other Data Stores

- Create Index
- Add Elements
- Suggestions

Demo
Azure Search

Features
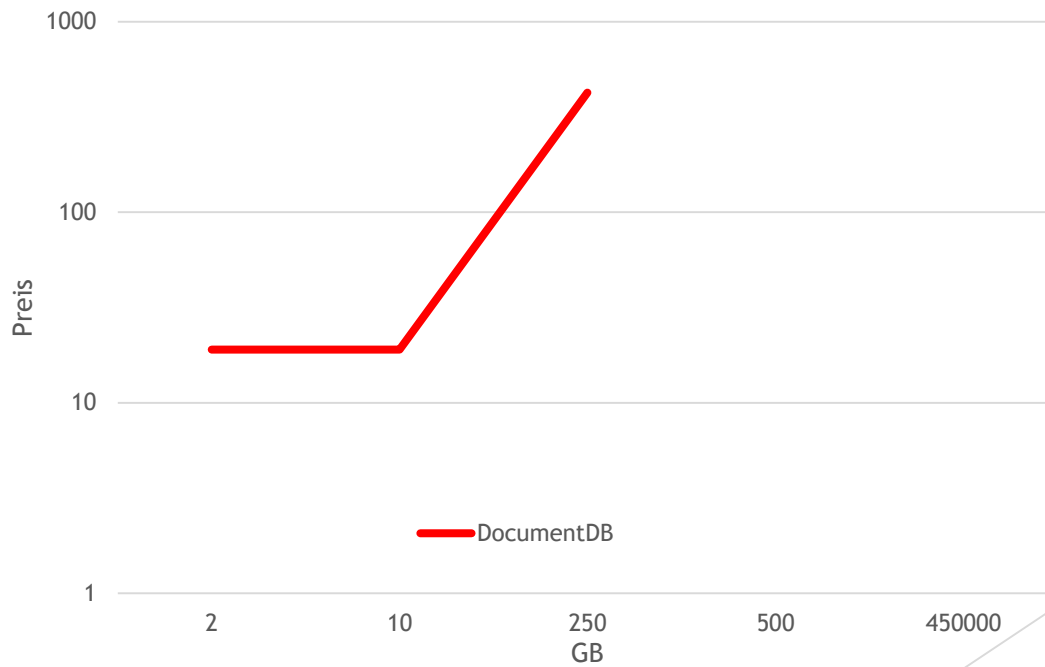
- Scoring Profiles
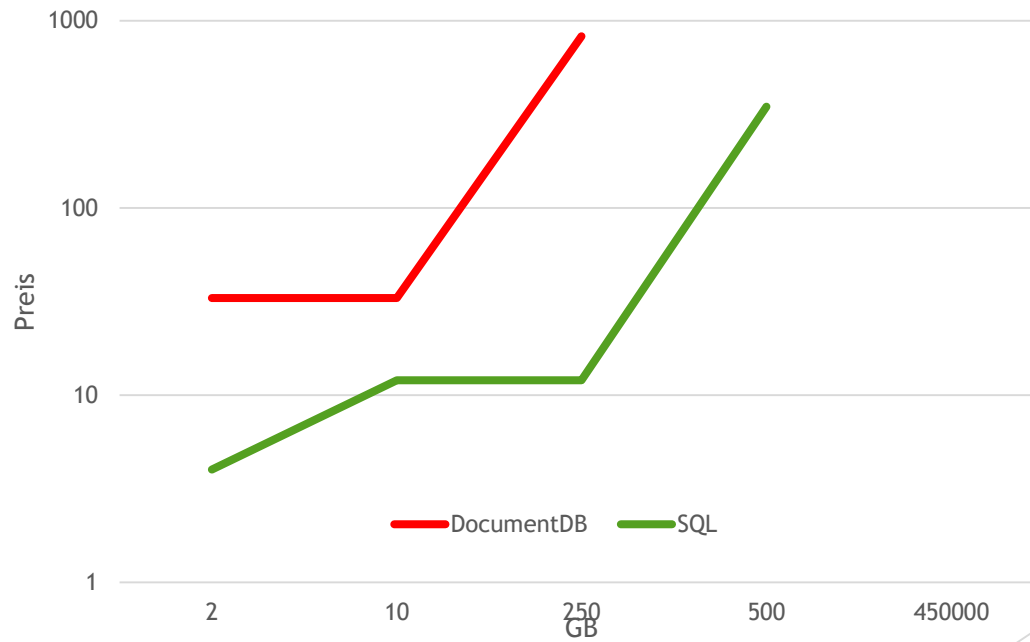- Type-ahead suggestions
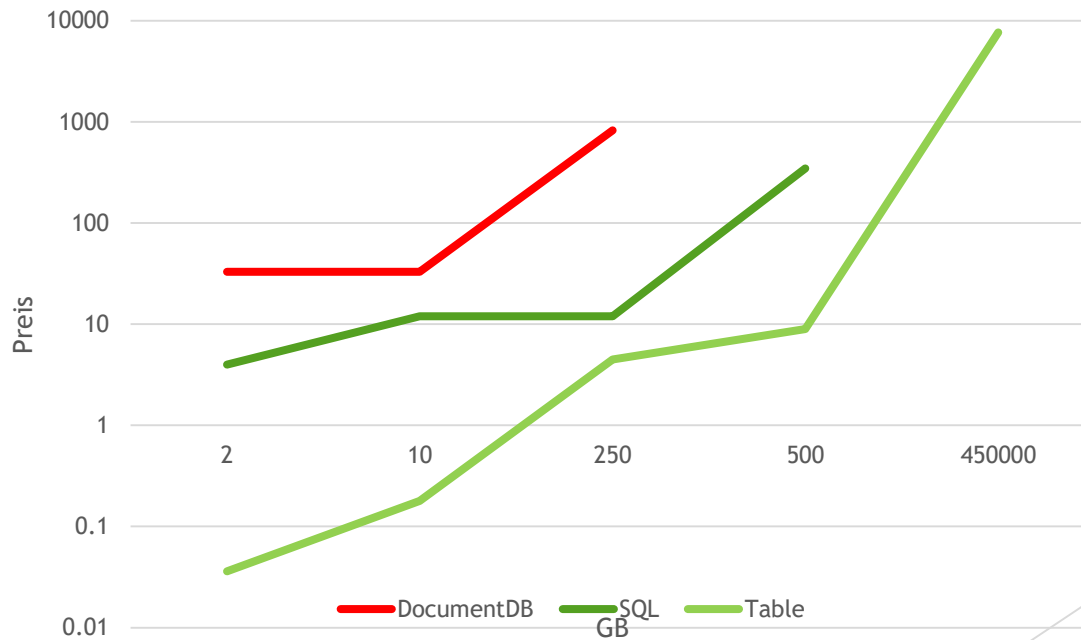- Faceted navigation
- Hit highlighting

Storage Vergleiche

Preis (pro Monat) / Size

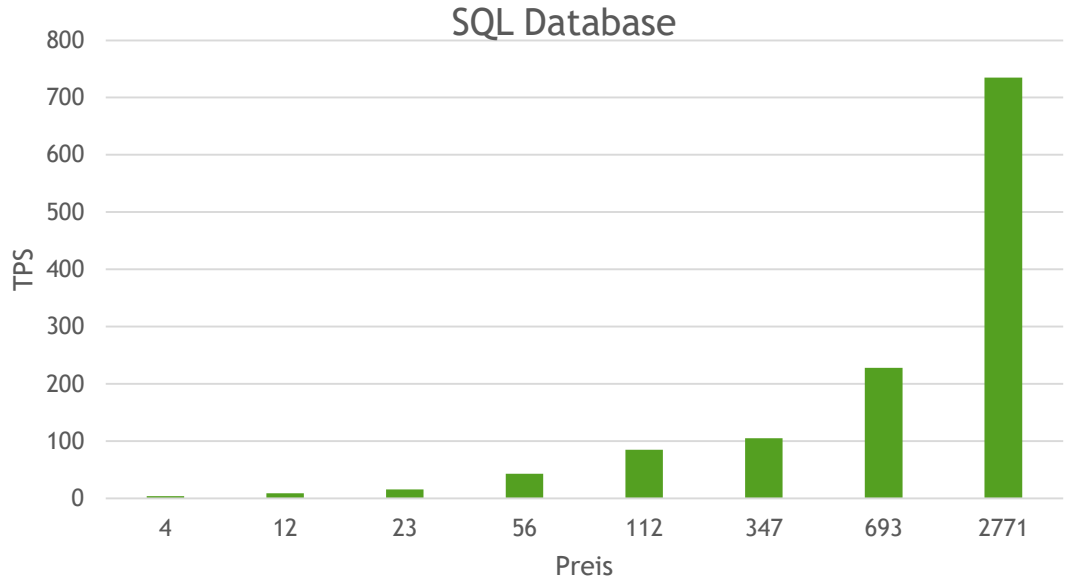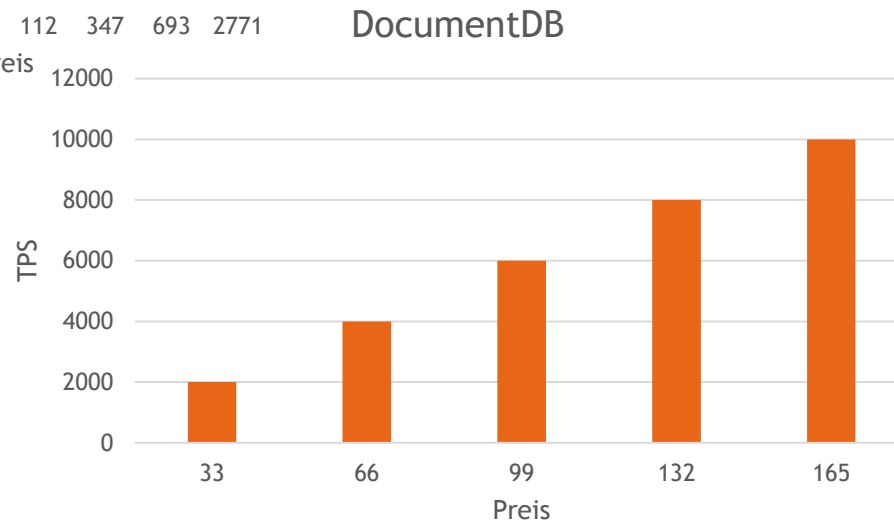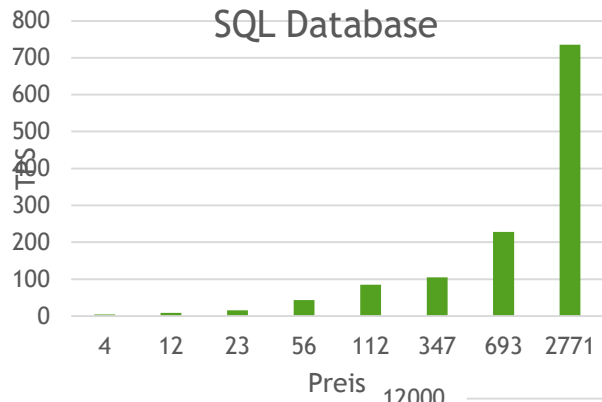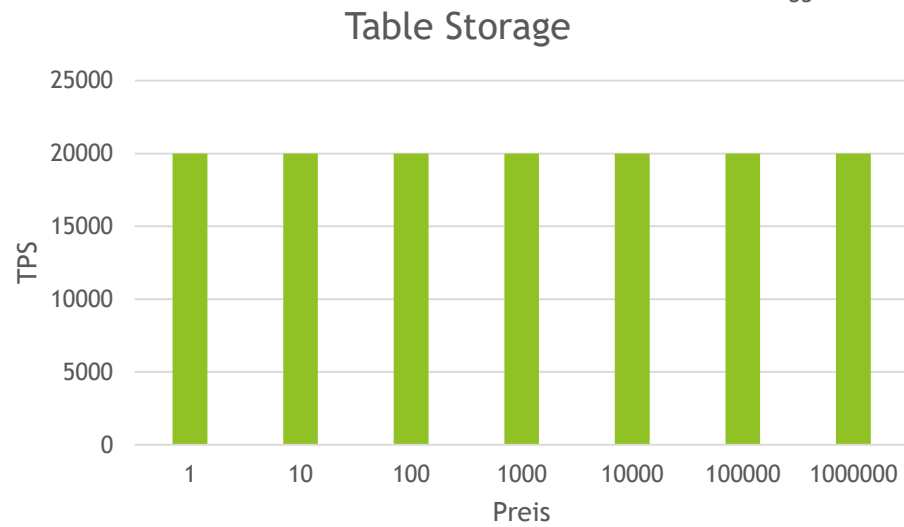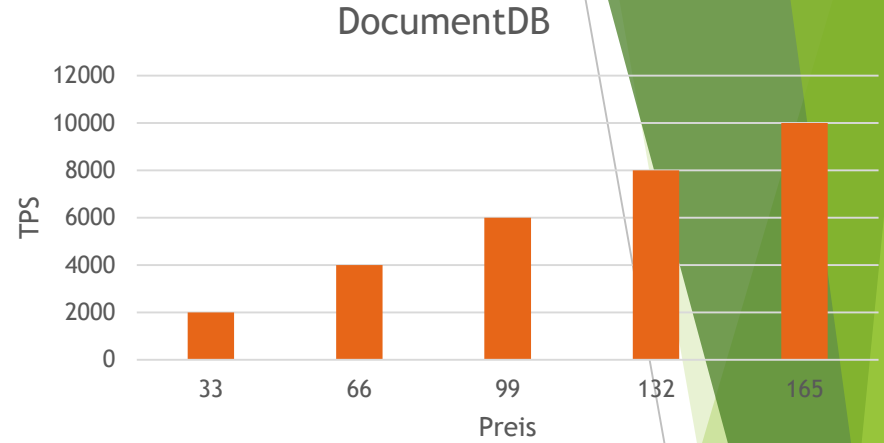# Preis (pro Monat) / Size

Preis (pro Monat) / Size

TPS / Price

TPS / Price

SQL Database

DocumentDB

TPS / Price

SQL Database

DocumentDB

Table Storage

Summary

SQL Azure	• Tools • Preis
Table Storage	• Datenmengen • Performance
DocumentDB	• JSON • Indexing
Azure Search	• Full Text Search

Questions?

- Source Code
  - http://blog.cninnovation.com

- Twitter: @christiannagel
- http://www.cninnovation.com

More Information

▶ http://www.windowsazure.com

▶ Upcoming book: Professional C# 6

▶ Training by Christian Nagel