Azure SQL Data Warehouse

2020년 03월

1

Chapter

Azure SQL Data Warehouse

데이타솔루션   Microsoft

01 | The Fast, Flexible & Secure hub for all your data

Fast
Unlimited Scale

Flexible
Fit your Needs

Trusted
Secure. Compliant.
Reliable.
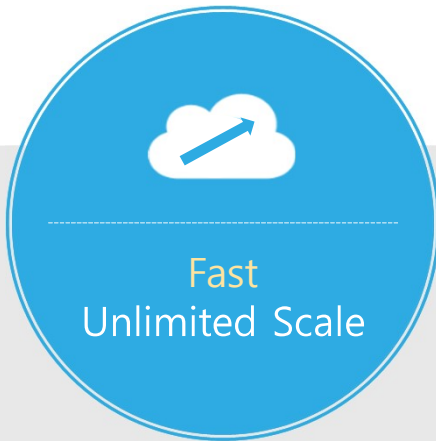
MPP to quickly run complex queries on any scale

Optimize cost by scaling compute and storage independently

Built-in advanced security features including Encryption, Audit, Threat Detection, AAD and VNet

Seamlessly compatible across Microsoft and 3rd party services

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Azure SQL
DW Architecture

01 | Logical Overview

Control Node (1)

Compute Node (1 ~ 60)

Storage

(60)

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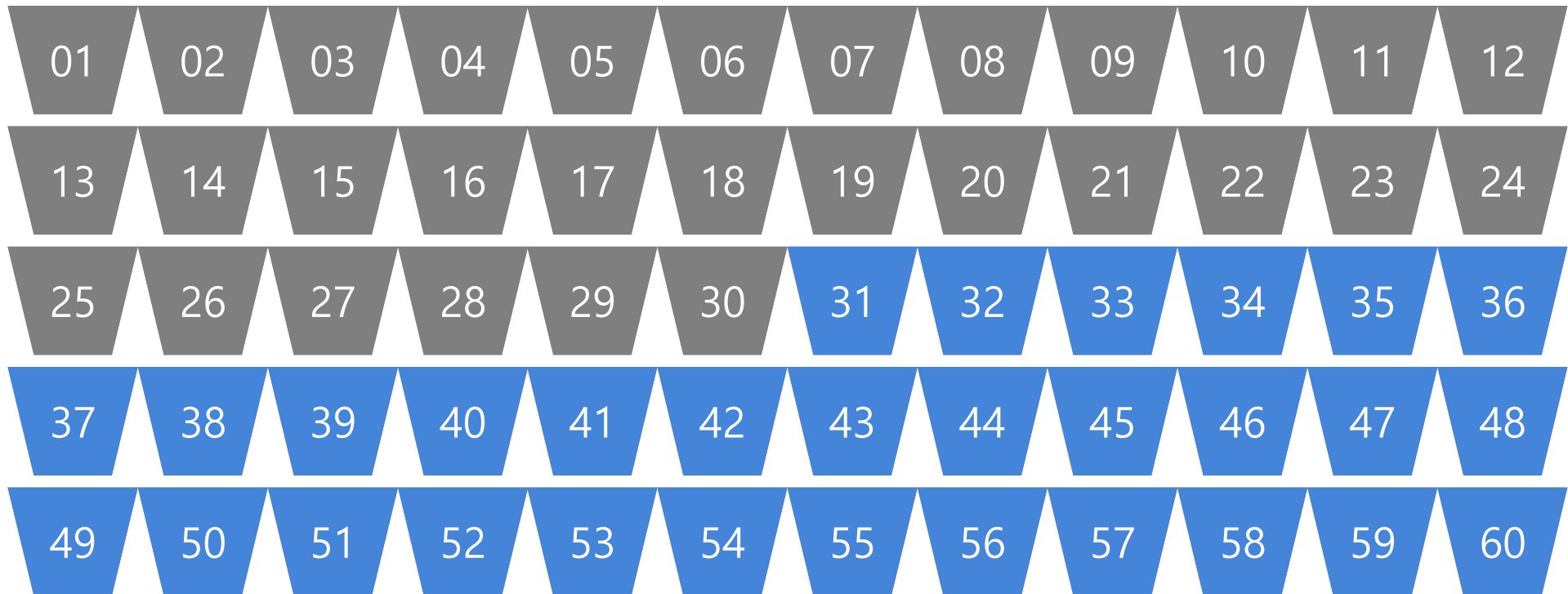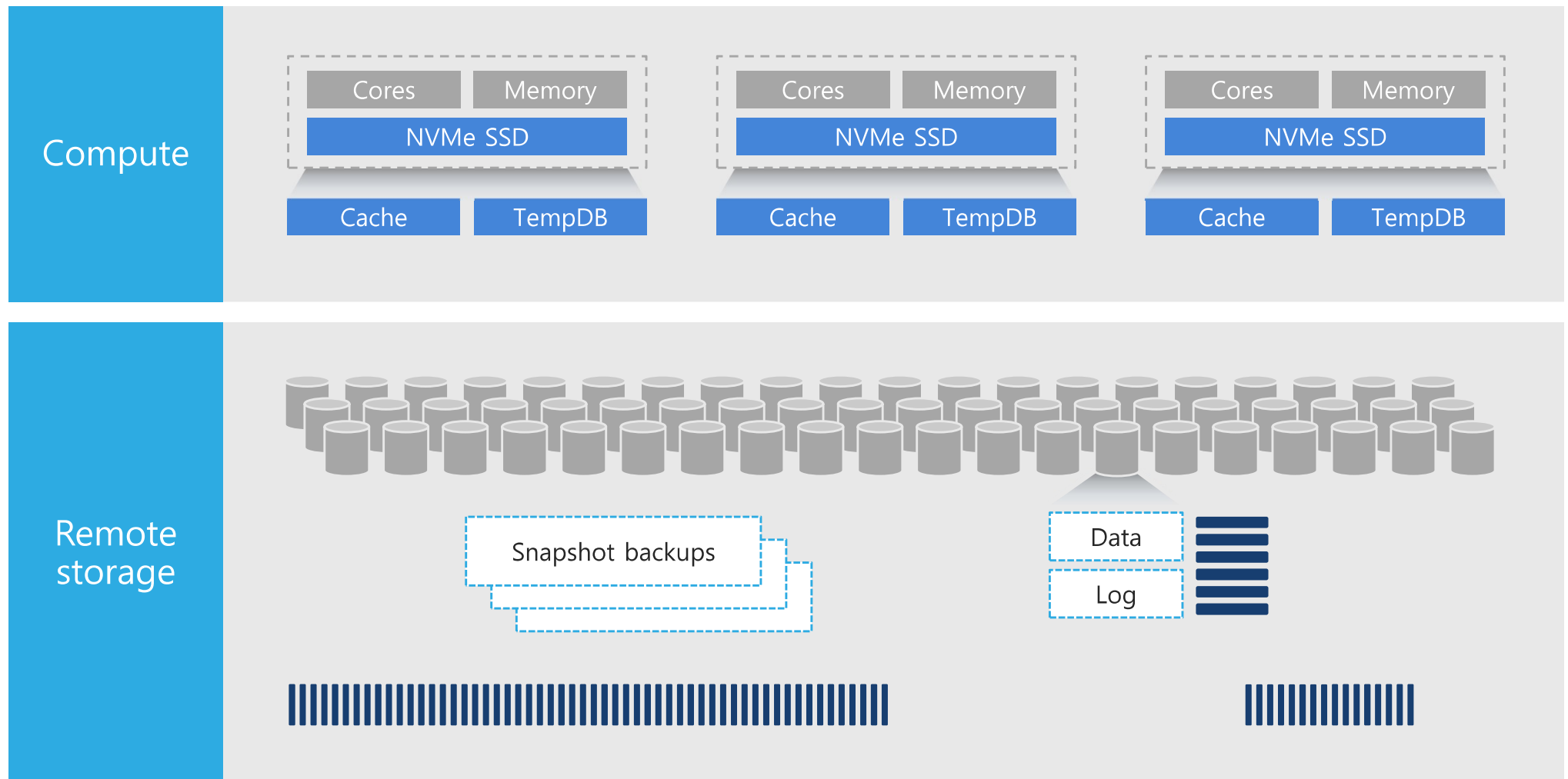
02 | DataWarehouse Unit

DWu 100θc

03 | Compute optimized Gen2 Architecture

Compute

| Cores | Memory |
| NVMe SSD |
| Cache | TempDB |

| Cores | Memory |
| NVMe SSD |
| Cache | TempDB |

| Cores | Memory |
| NVMe SSD |
| Cache | TempDB |

Remote storage

Snapshot backups

Data

Log

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04 | Distributed Queries

Result

Control

Compute
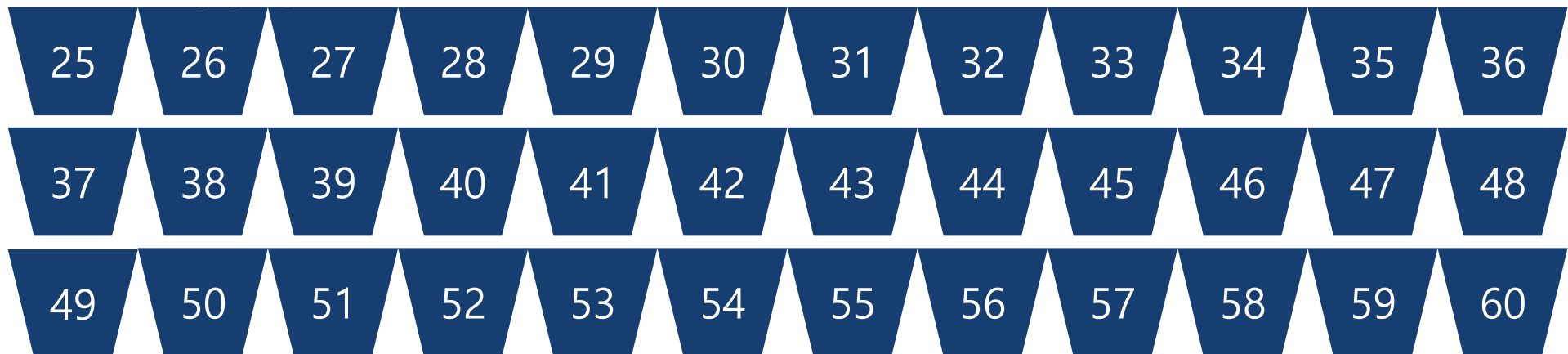
Storage
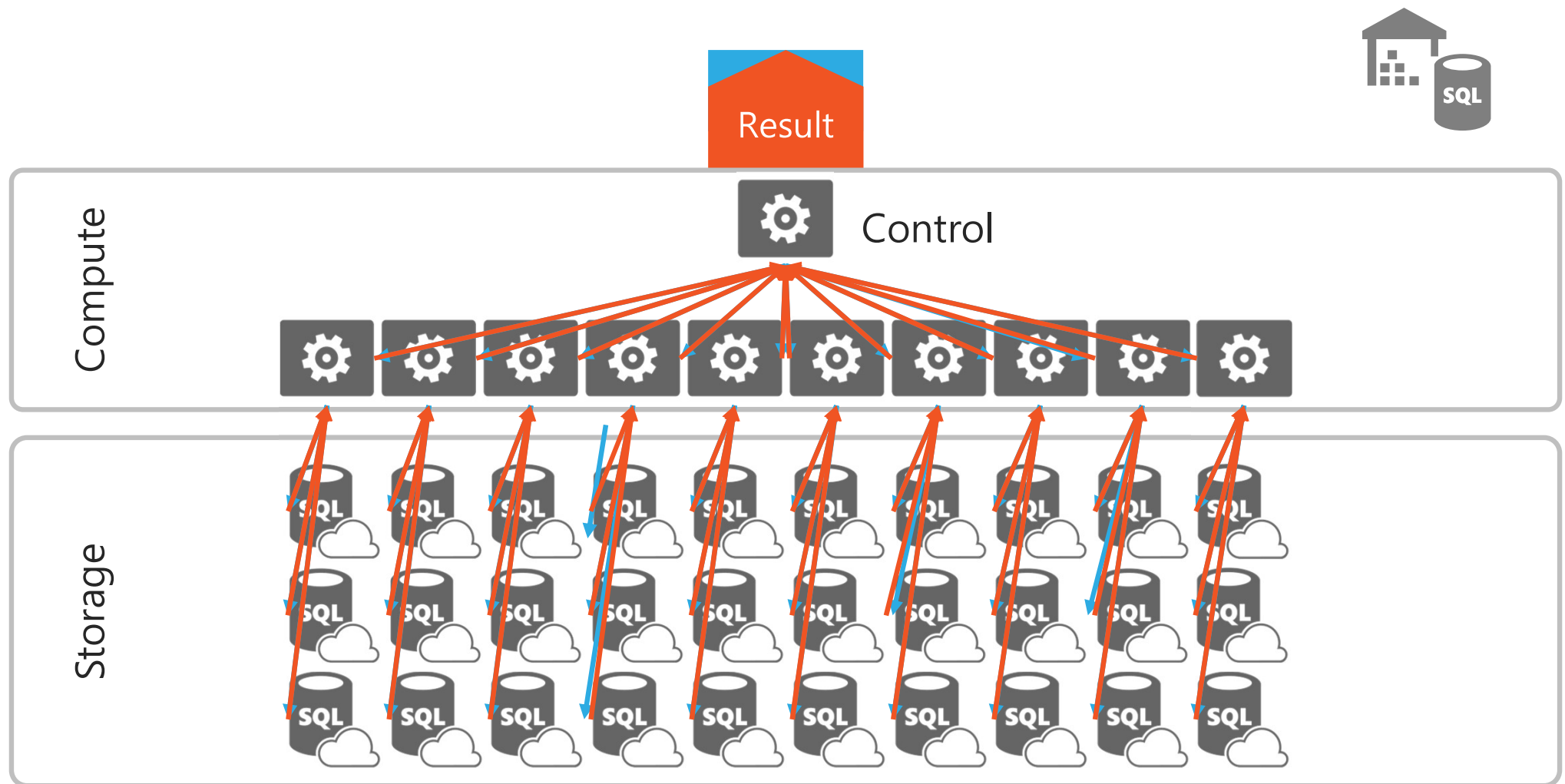
05 | Table Distribution Options – Round Robin

- **Data Distributed evenly across nodes**
- **Useful for large tables without a good hash column**

01											
13											
25	26	27	28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60

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06 | Table Distribution Options – Hash

HASH (0)

- **Data divided across nodes based on hashing algorithm**
- **Same value will always hash to same distribution**
- **Optimal for large fact tables**

| 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
| 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |

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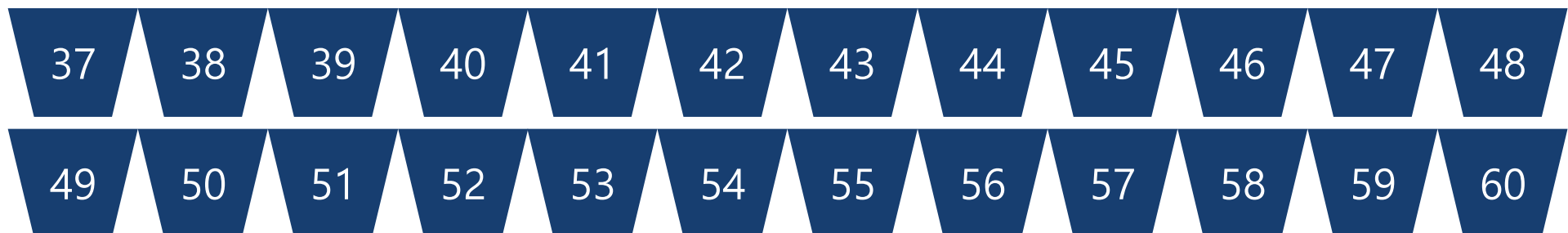
3 Chapter

Azure SQL DW WORKLOAD

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01   Resource Classes

Service Level	Max Concurrent Queries	Max Concurrency Slots	Dynamic Resource Classes				Static Resource Classes							
			smallrc	mediumrc	largerc	xlargerc	staticrc10	staticrc20	staticrc30	staticrc40	staticrc50	staticrc60	staticrc70	staticrc80
DW100c	4	4	1	1	1	2	1	2	4	4	4	4	4	4
DW200c	8	8	1	1	1	5	1	2	4	8	8	8	8	8
DW300c	12	12	1	1	2	8	1	2	4	8	8	8	8	8
DW400c	16	16	1	1	3	11	1	2	4	8	16	16	16	16
DW500c	20	20	1	2	4	14	1	2	4	8	16	16	16	16
DW1000c	32	40	1	4	8	28	1	2	4	8	16	32	32	32
DW1500c	32	60	1	6	13	42	1	2	4	8	16	32	32	32
DW2000c	48	80	2	8	17	56	1	2	4	8	16	32	64	64
DW2500c	48	100	3	10	22	70	1	2	4	8	16	32	64	64
DW3000c	64	120	3	12	26	84	1	2	4	8	16	32	64	64
DW5000c	64	200	6	20	44	140	1	2	4	8	16	32	64	128
DW6000c	128	240	7	24	52	168	1	2	4	8	16	32	64	128
DW7500c	128	300	9	30	66	210	1	2	4	8	16	32	64	128
DW10000c	128	400	12	40	88	280	1	2	4	8	16	32	64	128
DW15000c	128	600	18	60	132	420	1	2	4	8	16	32	64	128
DW30000c	128	1200	36	120	264	840	1	2	4	8	16	32	64	128

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02 | Importance

02 | Importance

Control Node

🕐 **Scheduler**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
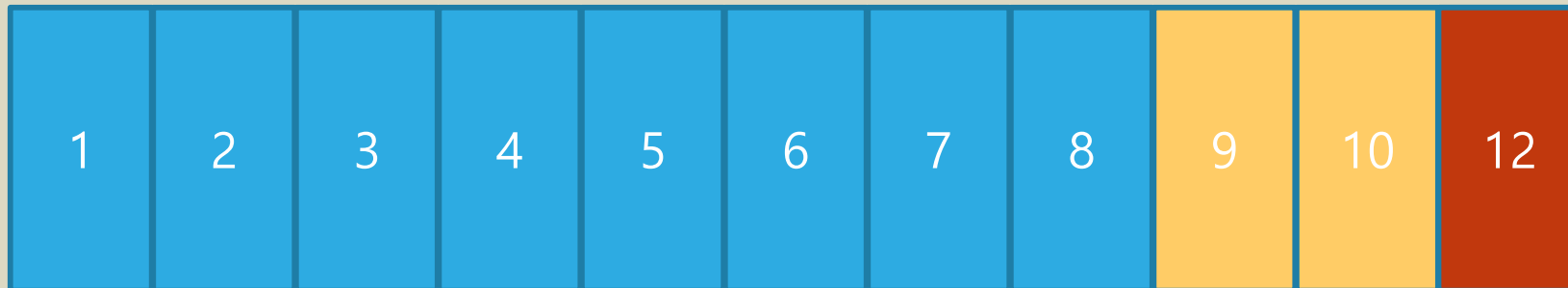
Running   **Queued**

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데이타솔루션

데이터로
새로운 세상을 그리다.

Thank you

INFRA

DATA

SERVICE