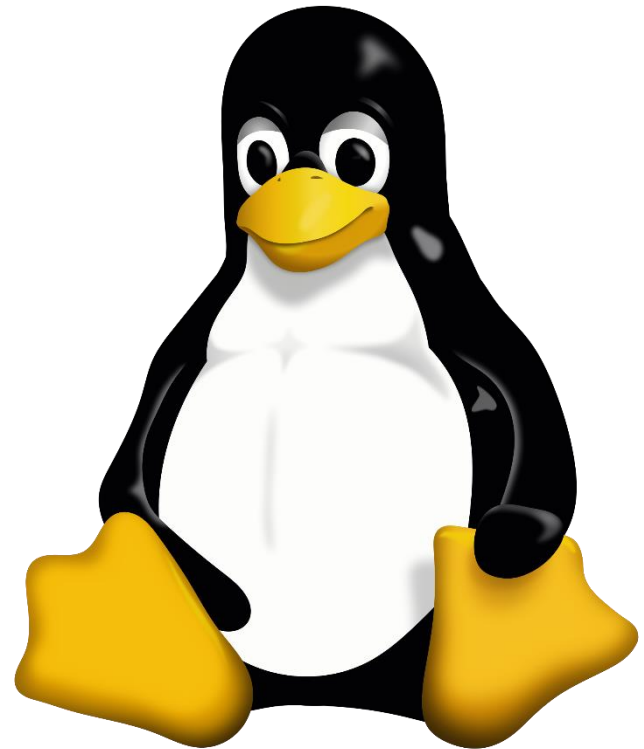


SQL Server on Linux.

Installation and Features



Slava Murygin, SMC LLC

www.SlavaSQL.BlogSpot.com

Slava Murygin:

- Independent SQL Server Consultant in Baltimore – Washington DC Metro Area.
- Amateur Astronomer
- Amateur Photographer.

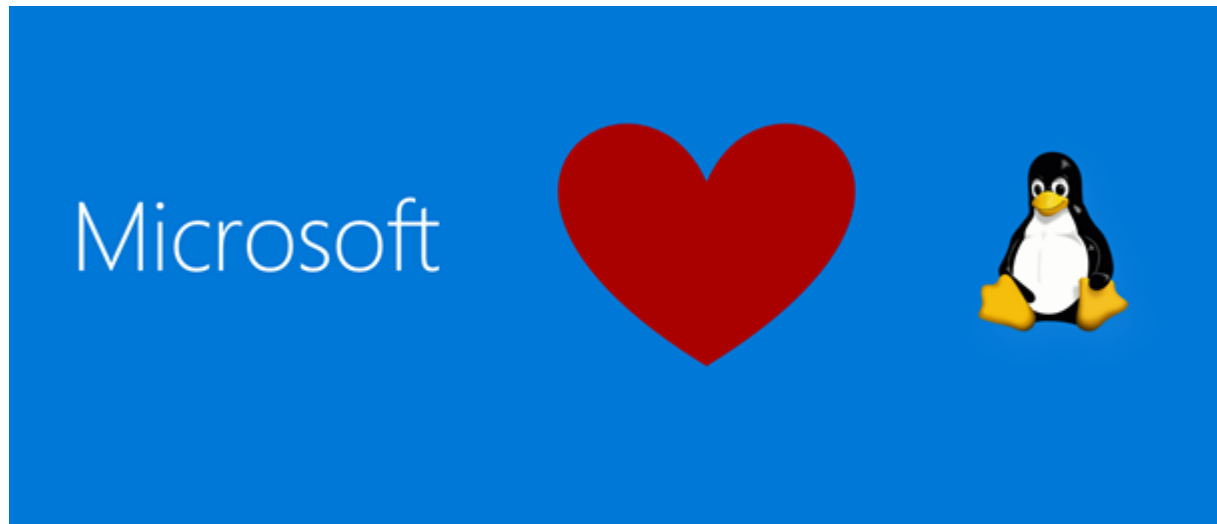


- Baltimore – May 6, 2017



SQL Server on Linux

- First Announcement: March, 2016
- Have done internal testing since July, 2016
- CTP1: November, 2016
- Production target: Late-2017



Why are we talking about it?

- Windows 2016 Datacenter
license cost (16 cores): \$6,155
- SQL Server 2016 Enterprise
license cost (16 cores): \$114,048

Total cost for 16 cores : ~\$120K

Any alternatives?

- MySQL
- PostgreSQL
- MariaDB



Will it require conversion later?

Target audience:

- Small businesses – Low cost;
- New businesses – Low cost with big potential growth;
- Enterprise businesses – Reduced cost on multiple servers;
- SQL Server oriented teams

SQL DBA and Linux Gurus



SQL Server Installation

- **Ubuntu**

```
#> sudo apt-get install -y mssql-server
```

- **RHEL (Red Hat Linux)**

```
#> sudo yum install -y mssql-server
```

- **Docker Engine**

```
#> docker pull microsoft/mssql-server-linux
```

- **SLES (SUSE Linux Enterprise Server)**

```
#> sudo zypper install mssql-server
```

<https://docs.microsoft.com/en-us/sql/linux/>



Demo #1

- SQL Server Install on Ubuntu;
- Tools;
- File Locations;
- Restore a database;

Hardware Requirements/Limitations

- **Memory:**

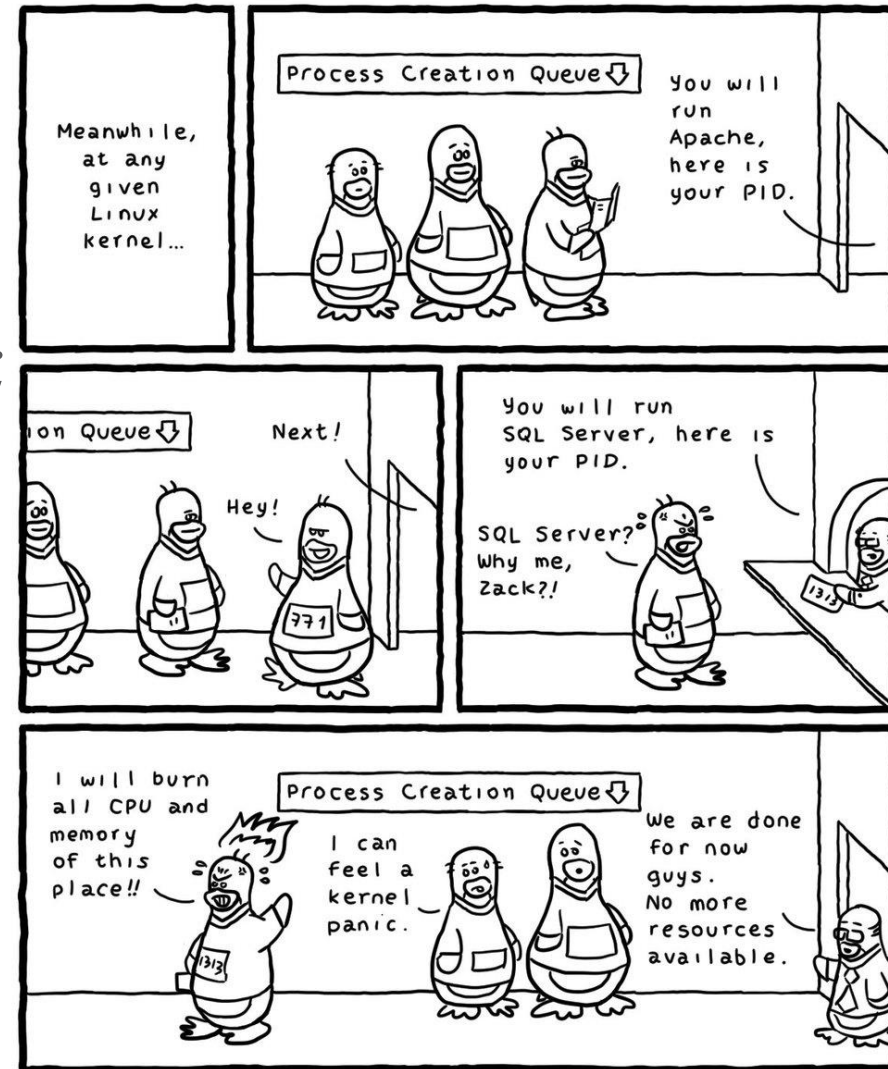
Min ~ 4Gb;

Max ~ 256Gb (tested);

- **CPU Power:**

Up to 63 Cores

(as of 2016-09-30);



Daniel Stori {turnoff.us}

Currently Supported Features

- **Database engine:**

In-Memory OLTP; Updatable Columnstore Indexes; JSON Support; Query Store;

- **High Availability:**

Failover clustering;

- **Security:**

Only SQL Server authentication is currently available; Row Level Security; Dynamic Data Masking;

- **Services:**

SQL Server Service;

Currently Not Supported Features

- **Database engine:**

Full-text Search, Replication, Stretch DB, Polybase, Distributed Query System extended stored procedures (XP_CMDSHELL, etc.), Filetable;

- **High Availability:**

Always On Availability Groups; Database mirroring;

- **Security:**

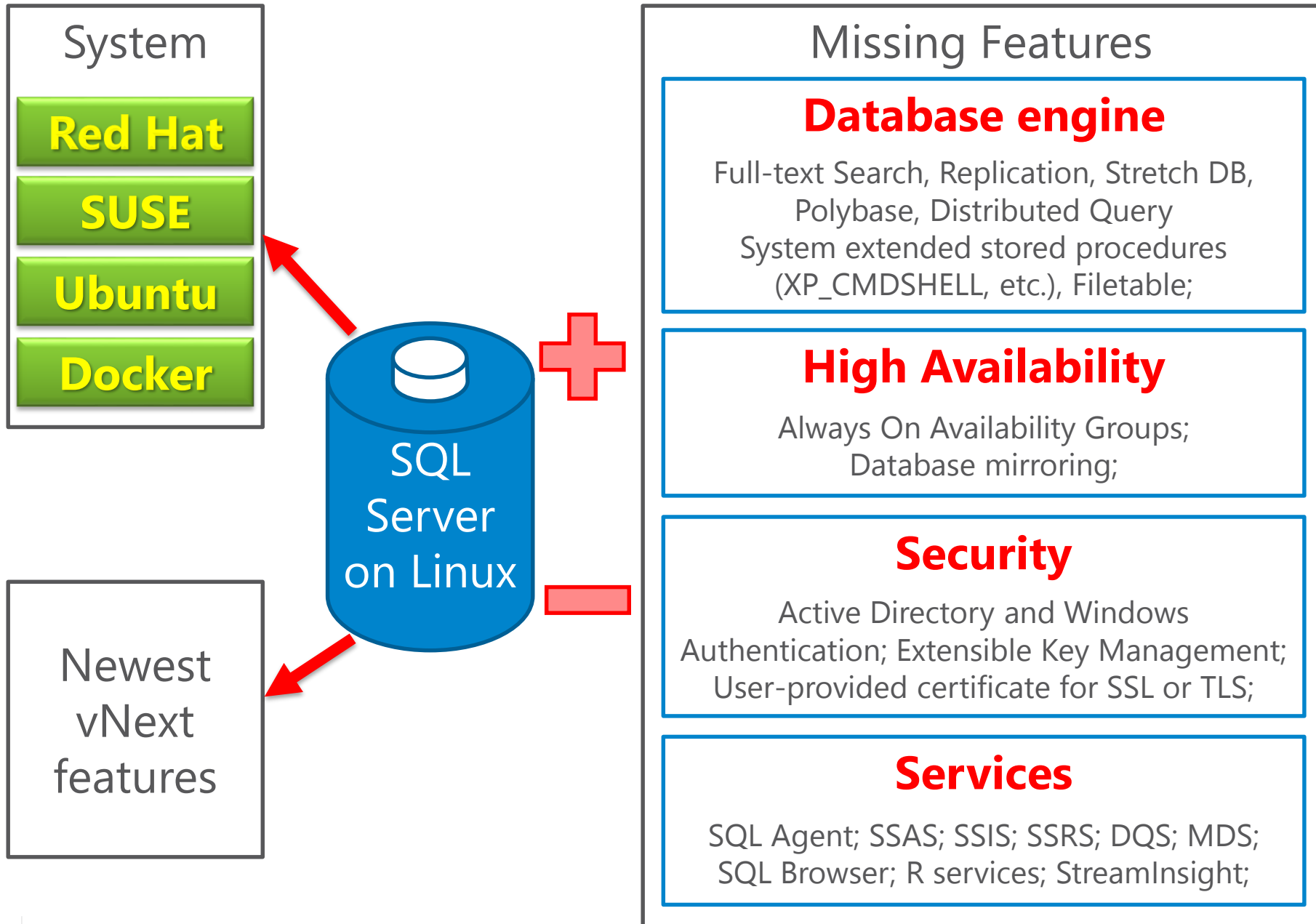
Active Directory and Windows Authentication; Extensible Key Management; Use of user-provided certificate for SSL or TLS;

- **Services:**

SQL Server Agent; SQL Server Browser; SQL Server R services; StreamInsight; SSAS; SSIS; SSRS; Data Quality Services; Master Data Services;

Newly Supported Features

- **Trim**
 - **CONCAT_WS**
 - **STRING_AGG**
 - **TRANSLATE**
-
- `sys.dm_exec_query_statistics_xml` (with TF 7412)

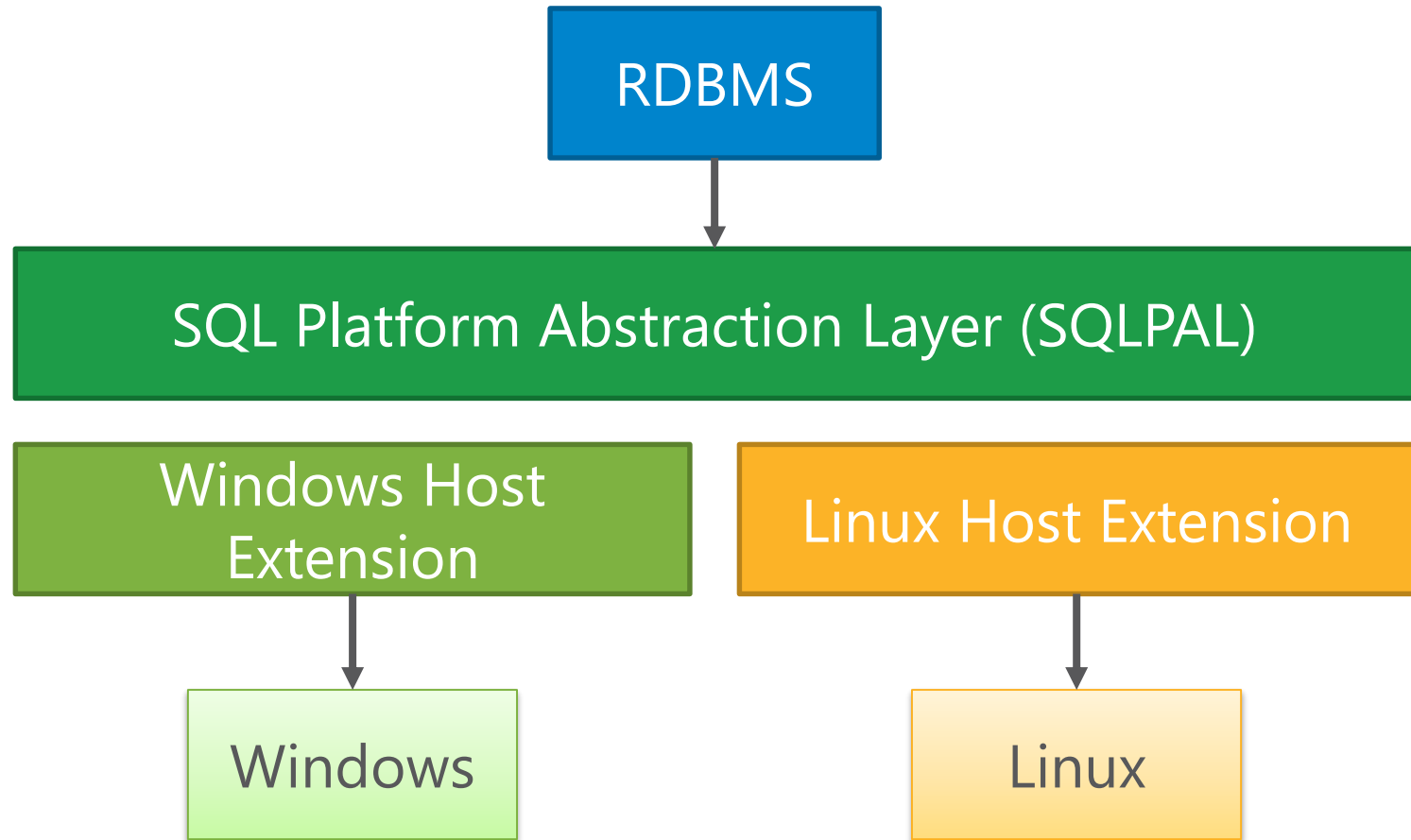




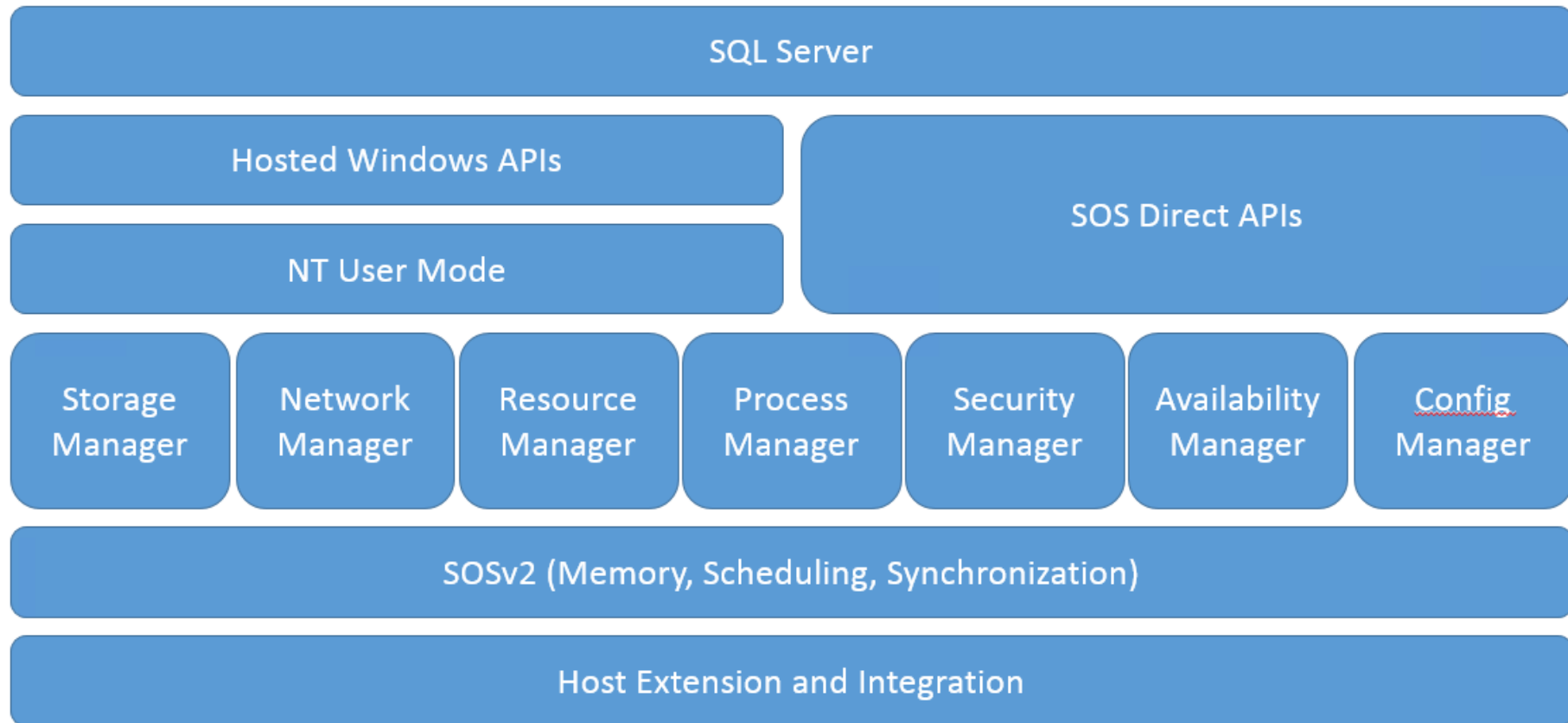
Demo #2

- Features

System architecture

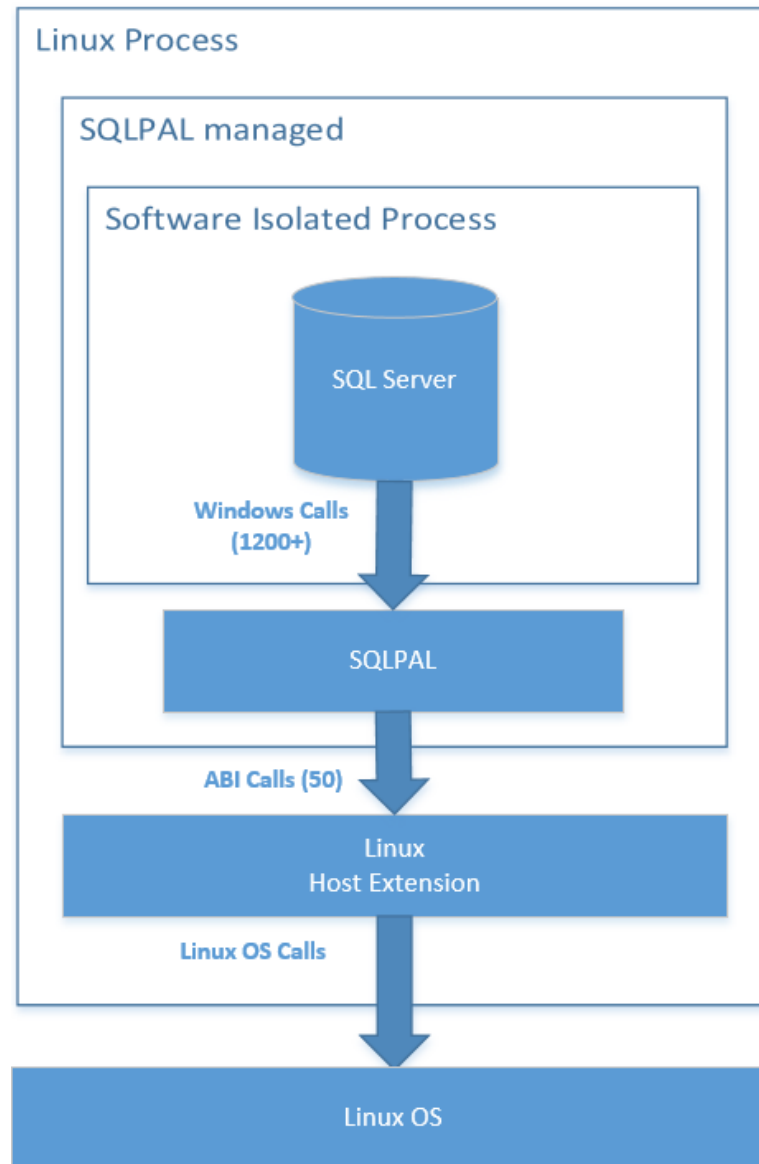


System architecture SQLPAL



<https://blogs.technet.microsoft.com/dataplatforminsider/2016/12/16/sql-server-on-linux-how-introduction/>

System architecture on Linux





Demo #3

- Performance

Administration

Setup

- Network;
- Mapped drives;
- Firewall;
- Swap file;
- Automation;

Monitoring

- CPU performance
- Memory
- Free space

Administration

- **Change the TCP port:**

```
sudo /opt/mssql/bin/mssql-conf set tcpport <new_tcp_port>
```

- **Change data or log directory location:**

```
sudo /opt/mssql/bin/mssql-conf set defaultdatadir /tmp/data
```

```
sudo /opt/mssql/bin/mssql-conf set defaultlogdir /tmp/log
```

- **Enable/Disable traceflags for startup:**

```
sudo /opt/mssql/bin/mssql-conf traceflag 2345 3456 on
```

- **Change the SQL Server collation:**

```
sudo /opt/mssql/bin/mssql-conf set-collation
```

<https://docs.microsoft.com/en-us/sql/linux/sql-server-linux-configure-mssql-conf>



Demo #4

- Linux for SQL DBA:
 - Midnight Commander (mc);
 - System monitor: htop



Demo #5

- Manual Failover Cluster



Questions?

References

SQL Server on Linux Documentation

<https://docs.microsoft.com/en-us/sql/linux/>

Install SQL Server on Linux

<https://docs.microsoft.com/en-us/sql/linux/sql-server-linux-setup>

Manage SQL Server on Linux

<https://docs.microsoft.com/en-us/sql/linux/sql-server-linux-management-overview>

Use PowerShell on Windows to Manage SQL Server on Linux

<https://docs.microsoft.com/en-us/sql/linux/sql-server-linux-manage-powershell>

Shared disk cluster for SQL Server on Linux

<https://docs.microsoft.com/en-us/sql/linux/sql-server-linux-shared-disk-cluster-configure>



Thank you
Very much!



- Baltimore – May 6, 2017

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