#### SERVICE INTRODUCTION - TESTING SCOPE & OVERVIEW

#### Microsoft SQL Server 2016 in WISP/SIP Architecture

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**What We Are Testing**

Release of SQL Server 2016 in the SIP architecture (WISP).

# Architecture

As defined by the Architects. No changes to the hardware stacks are planned, only to the release of SQL Server on these stacks.

# What’s new or changing from the previous version (if applicable)?

|  |  |
| --- | --- |
| **New** | **Previous** |
| SQL Server 2016 | SQL Server 2014 |
| Windows 2016 | Windows 2012 R2 |
| SnapDrive 7.2.2 | SnapDrive 7.0.2 |
| SnapManager for SQL 7.2.2 | SnapManager for SQL 7.1 |
|  |  |

# Identified Scope-Creep Concerns

1. We will want to scale/performance test SMSQL 7.2.2 on Win2016/SQL2016. When we OR’d CDOT, the limits were defined by the performance issues we found with SMSQL during testing. This would also be a potential driver for regression testing SMSQL 7.2.2 and making that the standard for Win2016/SQL2016 version that we support for WISP with CDOT and 7 MODE filers.

# Scope of Environments to be Certified

Specific details on the scope of the environments that will be certified upon the outcome of this project.

**In-scope (Must do):**

|  |  |
| --- | --- |
| **Item** | **Details** |
| Windows 2016 /SQL 2016 in the WISP/SIP architecture | **VM:** Stand-alone, cluster, default instance, named instance – Running the standard WISP architecture (standard disk layout, with snapshot backups) |
|  |  |

**Optional (May do, if time):**

|  |  |
| --- | --- |
| **Item** | **Details** |
|  |  |

**Out-of-Scope :**

|  |  |
| --- | --- |
| **Item** | **Details** |
| Non-snapshot backups (Avamar and TDP) |  |
| AlwaysOn |  |
| Double Take |  |
| Snap Manager Database Clone |  |

# Scope of Environments to be Tested

Specific details on the scope of the environments that will be tested during this project.

*NOTE: In some cases, environments that are required for certification may not be tested, due to resource constraints (hardware or people). For example, we may only test a SQL feature (like compression) on HP BL460c-G8 blades, but we may consider it certified on any/all hardware platforms.*

**In-scope (Must do):**

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| --- | --- |
| **Item** | **Details** |
| Windows 2016 / SQL 2016 in the WISP/SIP architecture | Stand-alone, clusters, running SQL 2016 Standard and Enterprise and supported features, default and named instances |
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|  |  |

**Optional (May do, if time):**

|  |  |
| --- | --- |
| **Item** | **Details** |
|  |  |

**Out-of-Scope :**

|  |  |
| --- | --- |
| **Item** | **Details** |
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# Scope for Testing

Specific details on the scope of the testing efforts.

**In-scope (Must do):**

**NOTE:** Need to discuss how much of this is tested on both the VM and blade, stand-alone, and cluster, default instance and named instance, etc.

|  |  |
| --- | --- |
| **Item** | **Details** |
| Software acquisition and Pricing | Get correct install bits from MVLS, upload to software$ share, get new pricing info, communicate pricing changes, get capex updated, etc.  Only done once |
| General R&D | What’s deprecated and what are the impacts (custom scripts?), what’s changed (replication functionality, profiler, h/w limits, etc.), etc  Only done once |
| Solution Design / Build Center / Install | Work through install and document (work with Delivery-DB) for Database Engine as well as SSRS, SSAS, and SSIS. Work through changes to the solution design process and/or BuildCenter changes.  Needs to be done for stand-alone and cluster |
| Custom scripts | Test all custom scripts (post-install steps). Verify they all do what they are intended to do.  Needs to be tested for stand-alone and cluster, default and named instance |
| Existing features supported by DCO | Test major features we support today (log-shipping, mirroring, replication, TDE, compression, Always-On). Need to determine how far we go with testing (just setup?)  Needs to be tested for stand-alone and cluster, default and named instance?? |
| Third-party software | Double-Take, SMSQL  Needs to be tested for stand-alone and cluster |
| Monitoring | Custom SQL monitors supported by EMAT (SiteScope, parser, iMon, etc.).  Custom scripts supported by DBA (Replication monitor, DB mirroring, TempDB, DMV collection, etc)  I5 Tools Install, configure & test with SSRS  Needs to be tested for stand-alone and cluster, default and named instance |
| Upgrades | What’s the upgrade path from previous versions, and what’s the plan for things like replication, mirroring, etc.? Do we test every possibility, or just do some R&D and ensure Support DBA has an idea of what the direction is? (any upgrade would be tested in DV/QA before being done in PROD)  Needs to be done for stand-alone and cluster, default and named instance. |
| Cluster testing | Test cluster resource policy settings  Needs to be done for cluster, default or named instance |
| Backup/Restore | New SD and SMSQL versions. (This is really an OR project in itself)  Needs to be done for stand-alone and cluster, default and named instance. Test existing version (7.1) below bugs are fixed.  Snap Labeling issue.  Restore databases with different Snap Drive and Snap Manager service accounts |
| WISP Stack Testing | Test filer takeover/giveback, test network layer failures, scale test SMSQL  Needs to be done for stand-alone and cluster, default and named instance |
| Performance benchmark |  |

**Optional (May do, if time):**

|  |  |
| --- | --- |
| **Item** | **Details** |
| Build SQL 2016 shared environment |  |
|  |  |

**Out-of-Scope :**

|  |  |
| --- | --- |
| **Item** | **Details** |
| In-Memory OLTP (Hekaton) |  |
| Clustered Updatable Columnstore Indexes |  |
| Deferred Durability |  |
|  |  |

# Lessons Learned from POC

N/A – No POC for this project

# Focus Areas During Testing

List particular focus areas to be mindful of during the actual tests (such as thruput, network speeds, bugs, etc.)

# Roles and Responsibilities

Roles and responsibilities for Team Members on Testing Team.

General Structure:

* Operational Readiness team members provide resource support and guidenance for the testing effort.
* D&E and Support team members perform the actual testing, necessary script modifications, documentation modifications, and procedure modifications for their areas - to ensure accuracy , **knowledge transfer**, and experience gathering within their respective areas.

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| --- | --- | --- | --- |
| **Resource** | **Location / TimeZone** | **Role, Assists with…** | **Area of Expertise** |
| Senadhipatyam, Chandrakanth (TR Technology & Ops) | NY(EST) | Validation testing, updates to support documentation, etc. | MSSQL |
| J, Kumaraswamy (TR Technology & Ops) | BANGALORE(IST) | Validation testing, updates to support documentation, etc. | MSSQL |
| Kumar, Maddineni Naveen (TR Technology & Ops) | BANGALORE(IST) | Validation testing, updates to support documentation, etc. | MSSQL |
| Srinivas, Ramesh (TR Technology & Ops) | BANGALORE(IST) | Validation testing, updates to support documentation, etc. | MSSQL |
| Malik, Anuja (TR Technology & Ops) | HYDERABAD(IST) | Making decisions regarding design/standards, assist with testing, documenting design/standards, etc. | MSSQL |
| Lakshmikanthan, Pradeep (TR Technology & Ops) | BANGALORE(IST) | Making decisions regarding design/standards, assist with testing, documenting design/standards, etc. | MSSQL |
| Chacko, Sanju (TR Technology & Ops) | BANGALORE(IST) | OS related issues and troubleshooting | WINDOWS |
| Badakanakoppal Karigowda, Mahesha (TR Technology & Ops) | BANGALORE(IST) | Storage related issues and troubleshooting | STORAGE |
|  |  |  |  |

# Equipment To Be Used

|  |  |  |  |
| --- | --- | --- | --- |
| **Server Name** | **Server Type** | **Size** | **Purpose/Testing Focus** |
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|  |  |  |  |

# Configuration Details