Skype for Business Assessment: Prerequisites and Configuration

This document explains the required steps to configure the Skype for Business Assessment included with your Azure Log Analytics Workspace and Microsoft Unified Support Solution Pack.

There are **two scenarios** available to configure the assessment. Determine which scenario fits best for your organization.
1. OMS Gateway and data collection machine
2. Data collection machine only

OMS Gateway and data collection machine
This scenario is the most secure and recommended option to help protect privileged account credentials which are used on the scheduled task configured on this machine needed to run the assessment. This scenario requires two computers. One will be designated as the data collection machine, and the second machine will be the OMS Gateway. In this scenario, the data collection machine has no Internet connection and connects to the OMS Gateway to upload the data to log analytics. The OMS Gateway must have Internet access. This scenario is recommended for environments where the Internet connection is restricted from the data collection machine or where security is a concern due to this schedule task requirement. For information about the OMS Gateway, go to https://go.microsoft.com/fwlink/?linkid=830157.

The data collection machine must be a member of the domain of the environment being assessed. It will collect data from all the servers in the Lync/Skype for Business environment. After the data is collected, the data collection machine will analyze the information, and for increased security, will forward the data to an OMS Gateway to upload it to log analytics.

The following path shows the relationship between your Windows computers and log analytics after you have installed and configured the OMS Gateway and data collection machine.

Data collection machine □ Collects data from all Lync/Skype for Business servers in the environment □ Forward collected data to the OMS Gateway □ Submit data to the log analytics *workspace*

Data collection machine only
This scenario can be used when the data collection machine can contact log analytics directly. It requires one computer that will be designated as the data collection machine which must be able to access the Internet to upload data to log analytics. This scenario can be used in environments where the Internet connection is not restricted.

The data collection machine must be a member of the forest being assessed. It will collect data from all the domain controllers in the forest. After the data is collected, the data collection machine will analyze the information and then upload the data to log analytics directly, which will require HTTPS connectivity to your log analytics workspace. The following path shows the relationship between your Windows computers and log analytics after you have installed and configured the data collection machine:

Data collection machine □ Collects data from all Lync/Skype for Business servers in the environment □ Submit data to the log analytics *workspace.*

Detailed information on these configurations and requirements are listed later in this document.

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System Requirements and Configuration at Glance

The Skype for Business Assessment supports a single Lync/Skype for Business Server environment with up to 85 servers and 150,000 users. Lync Server 2010, Lync Server 2013 and Skype for Business Server 2015 are supported, in either single or mixed version environments.

According to the scenario you want to use, review the following details to ensure you meet necessary requirements.

Supported Versions
- Your Lync/Skype for Business environment must run on **Lync Server 2010 and above.**

Common to Both Scenarios
- You'll need a log analytics workspace.
- Lync/Skype for Business Administrative Tools installed on the data collector machine.
- AD DS Remote Server Administrative Tools on the data collection Machine
- Unrestricted network access from the collector machine to Lync/Skype for Business servers including SQL Server used for enterprise pool and QoE/CDR and Office Online Servers
- WinRM QuickConfig on each Lync/Skype for Business servers
- Synthetic transaction user accounts need to be defined for each Lync/Skype for business server pool.
- **User account rights:**
    - Domain Admin on every domain of the forest, or Local Administrator access for all Lync/Skype for Business Servers (including Survivable Branch Appliances or Servers, also known as SBA/SBS)
    - Membership of Lync/Skype for Business Server related Active Directory groups:
        - ✓ RTCComponentUniversalServices
        - ✓ RTCSBAUniversalServices
        - ✓ RTCUniversalSBATechnicians
        - ✓ RTCUniversalServerAdmins
        - ✓ RTCUniversalUserAdmins
        - ✓ CSAdministrator

    - Local administrator on all SQL servers that support Lync/Skype for Business Server (for clusters, on all nodes where the instance can be present)
    - For each Lync/Skype for Business Server related instance, minimum set of permissions need to be at least
        - ✓ Connect SQL
        - ✓ View Any Database
        - ✓ View Server State

To verify, use Microsoft SQL Server Management Studio to connect to the instance. Under the instance properties, select the page 'Permissions'. Then, on the 'logins and roles' list select the one that represents your account, and check the effective permissions.

    - For each Lync/Skype for Business Server related database, specially RTC database on Enterprise Edition pools, and LcsCDR and QoEMetrics databases that support Lync/Skype for Business Server Monitoring server role, minimum set of permissions need to be at least.
        - ✓ Connect
        - ✓ Execute
        - ✓ Select

To verify, use Microsoft SQL Server Management Studio to connect to the database. Under the database properties, select the page 'Permissions'. Then, on the 'logins and roles' list select the one that represents your account and check the effective permissions.

Data Collection Machine

- **Microsoft Monitoring Agent (MMA)** operating system requirements refer to the Skype for Business server operating system requirement.
  Lync Server 2013
  Skype for Business 2015
  Skype for Business 2019
  Important: the option of installing MMA on client operating systems is strongly not recommended due to the risk of exposing privileged domain account credentials to lower trust workstations).
- The **data collection machine** must be a member server of the Active Directory domain in which the Lync/Skype for Business Server resides.
- **Data collection machine hardware:** minimum 8 GB of RAM, 2 GHz dual-core processor, minimum 10 GB of free disk space.
- The **data collection machine** is used to connect to one of the Management Servers in your Management Group and retrieve information from it, communicating over Remote Procedure Call (RPC), Server Message Block (SMB), WMI, remote registry, SQL Database, Lightweight Directory Access Protocol (LDAP) and Distributed Component Object Model (DCOM).
- Microsoft .NET Framework 4.0 or newer installed.
- The **data collection machine** must be able to connect to the Internet using HTTPS to submit collected data to your log analytics workspace. This connection can be direct or via a proxy.
- For the **Microsoft Monitoring Agent** to connect to and register with the log analytics workspace, it must have Internet access. If you use a proxy server for communication between the agent and the log analytics service, you'll need to ensure that the appropriate resources are accessible. If you use a firewall to restrict access to the Internet, you need to configure your firewall to permit access to log analytics. To ensure data can be submitted follow the steps in *Configure Proxy and Firewall Settings in Log Analytics* at https://azure.microsoft.com/en-in/documentation/articles/log-analytics-proxy-firewall/.

OMS Gateway (required in the **OMS Gateway and data collection machine** scenario)

- The **OMS Gateway** can be a standalone or member server. It requires Windows Server 2012 R2 or later.
- The **OMS Gateway** must be able to connect to the Internet using HTTPS to submit collected data to your log analytics workspace. This connection can be direct or via a proxy.
- **OMS Gateway hardware:** minimum 4 GB of RAM, 2 GHz processor.
- **OMS Gateway user account rights:** none required.

Click the link below to download the "Setup Assessment" documentation to install the OMS Gateway and Microsoft Monitoring Agent.

https://go.microsoft.com/fwlink/?linkid=860142

After you have finished the installation of the Microsoft Monitoring Agent/OMS Gateway, continue with the next section to set up the assessment.

Setting up the Skype for Business Assessment

When you have finished the installation of the Microsoft Monitoring Agent/OMS Gateway, you are ready to setup the Skype for Business Assessment..

On the designated data collection machine, complete the following:
1. Open the PowerShell command prompt as Administrator.

2. Run the command **Add-SfBAssessmentTask -WorkingDirectory <Directory>** command where <Directory> is the path to an existing directory used to store the files created while collecting and analyzing the data from the environment.
NOTE: If the directory does not exist, it must be created before you continue with the execution

3. Provide the necessary user account credentials.

NOTE: This domain account must have all the User Account Rights specified in the previous section.

4. The script will continue with the necessary configuration. It will create a Scheduled Task that will trigger the data collection.

```
Administrator: Windows PowerShell                                                           —

PS C:\users\romin> Add-SfBAssessmentTask -WorkingDirectory "C:\OMS\SfB"
[SfBAssessment]Detected agent configuration for Management Group AOI-49900795-7a88-4eee-a2de-ca8a46fc0c9e
[SfBAssessment]Enter the credential to be used to run this assessment. Credentials will be used to connect to remote server(s) for assessment.
[SfBAssessment]User(DomainName\UserName):
redmond\romin
[SfBAssessment]Enter the password for redmond\romin:
***********
[SfBAssessment]Creating Windows Schedule task to run assessment...
[SfBAssessment]SfBAssessment setup successful.
[SfBAssessment]Detailed log is at: C:\Users\romin\AppData\Local\Temp\Assessments_Configuration_20171018_085115.log
PS C:\users\romin>
```

5. Data collection will be triggered by the **Scheduled Task** named "**SfBAssessment** within an hour of running the previous script and then every 7 days. The task can be modified to run on a different date/time or even forced to run immediately.
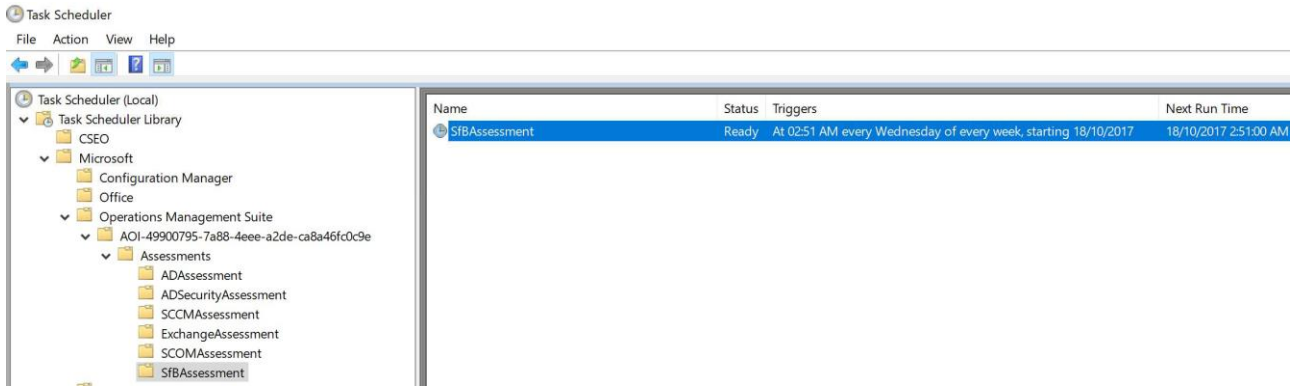

6. During collection and analysis, data is temporarily stored in the working directory specified during the installation using the following structure:
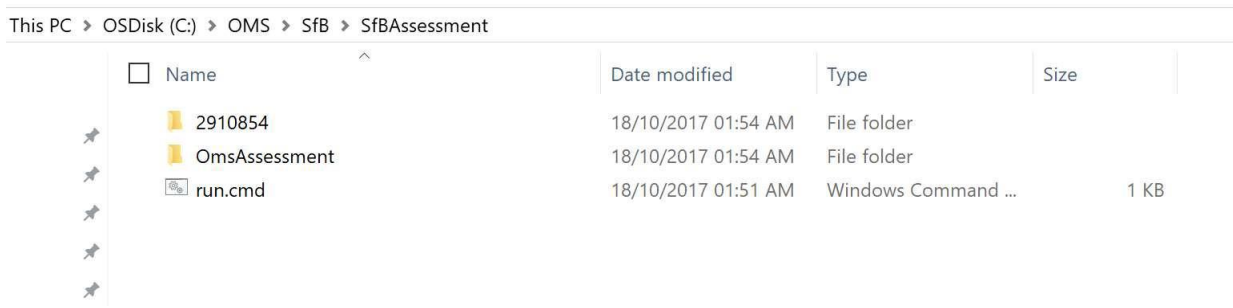

7. Once data collection and analysis are completed on the data collection machine, data will be submitted to your log analytics workspace:
   o **Directly** if the Data Collection Machine is connected to the Internet.
   o **Through the OMS Gateway** which will then submit the data to your log analytics workspace.

8. After a few hours, your assessment results will be available in your log analytics dashboard, click the **Skype for Business Assessment** tile to review:
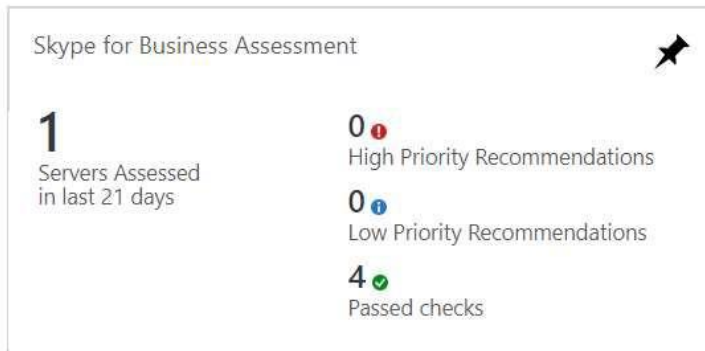
9. You will then be presented with findings grouped by the focus area.
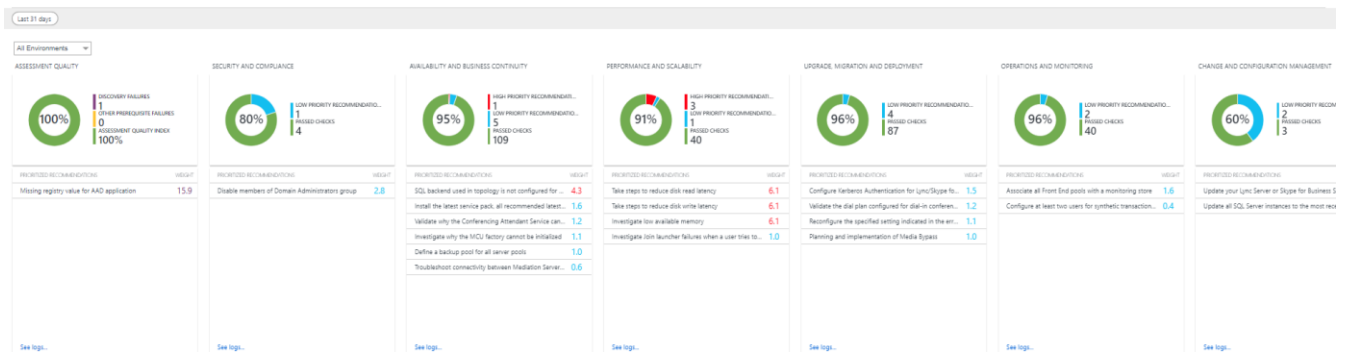
Appendix

Data Collection Methods

The **Skype for Business Assessment included in the log analytics workspace and Microsoft Unified Support Solution Pack** uses multiple data collection methods to collect information from your environment. This section describes the methods used to collect data from your environment. No VB scripts are used to collect data.

Data collection uses workflows and collectors. The collectors are:

1. Registry Collectors
2. LDAP Collectors
3. Event Log Collector
4. Lync Management Shell
5. WMI

1. Registry Collectors

Registry keys and values are read from the Lync/Skype for Business Servers. They include items such as:
- Version information from HKLM\SOFTWARE\Microsoft\Real-Time Communications.

This allows to determine the version of each Lync/Skype for Business component installed on Lync/Skype for Business Servers.

2. LDAP Collectors

LDAP queries are used to collect data for the Forest and Domain(s), Partitions and other components from Active Directory itself. For a complete list of ports required by AD, see: http://support.microsoft.com/kb/179442.

3. Event Log Collectors

Collects event logs from Lync/Skype for Business Servers. We collect the last 7 days of Warnings and Errors from the Lync/Skype for Business Server log.

4. Lync/Skype for Business Management Shell

With the Lync/Skype for Business module for Windows PowerShell, we collect Lync/Skype for Business Server configurations.

5. Windows Management Instrumentation (WMI)

WMI is used to collect various information such as:
- WIN32_Volume
  Collects information on Volume Settings for each DC in the forest. The information is used for instance to determine the system volume and drive letter which allows the client to collect information on files located on the system drive.
- Win32_Process
  Collect information on the processes running on each DC in the forest. The information provides insight in processes that consume a large amount of threads, memory or have a large page file usage.
- Win32_LogicalDisk

Used to collect information on the logical disks. We use the information to determine the amount of free space on the disk where the database or log files are located.