


---

# Configuring the QoE Feature

---

 Not supported by SBC SWe Lite in this release.

## Table of Contents

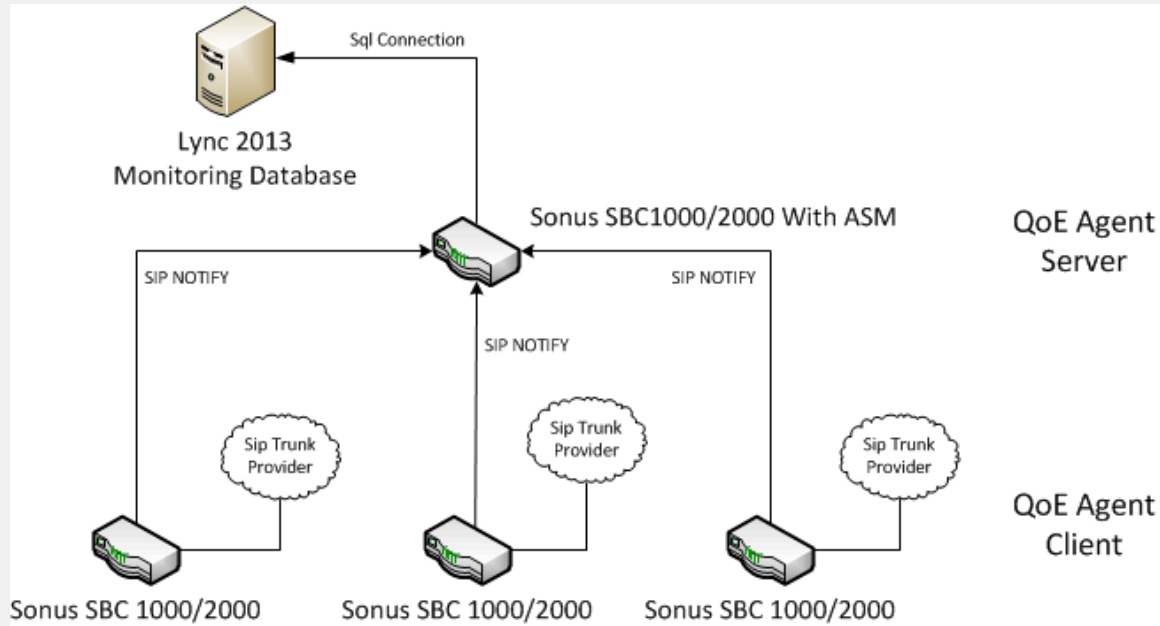
- Overview
- Prerequisites
- Step 1: Update your SQL database rights
- Step 2: Update the QoE Agent Server ASM AD Rights
  - Adding the ASM QoE Agent Server Machine Account to the RTCCoMponentUniversalServices Group
  - Adding the ASM QoE Agent ServerMachine Account to the RTCUniversalReadOnlyAdmins Group
- Step 3: Configure the QoE Agent Server Gateway
- Step 4: Configure the QoE Agent Client Gateway
- Troubleshooting
  - QoE Report Verification on the QoE Agent Client Gateway
  - QoE Report Verification on the QoE Agent Server Gateway

## Additional Resources

- Microsoft Lync Server 2013: <http://technet.microsoft.com/en-us/library/gg398616.aspx>
- Deploy Monitoring: <http://technet.microsoft.com/en-us/library/gg398199.aspx>
- Using Monitoring Reports: <http://technet.microsoft.com/en-us/library/gg558662.aspx>
- Promote your customized QoE Reports: <http://windowspbx.blogspot.fr/2013/09/lync-community-reports-repository-free.html>

## Overview

**Figure 1: QoE Features**



**!** The voice metrics will be collected only in the DSP mode; audio metrics will not be collected for any call routed in the Proxy or Direct Media mode.

The Quality of Experience (QoE) feature enables statistics reporting to a QoE Server in order to provide quality monitoring. The information collected helps administrators better understand the media quality that users experience. With QoE monitoring, the administrators can:-

- Gather statistics on media quality at individual locations or based on a grouping of subnets.
- Proactively monitor and troubleshoot media quality of experience issues.
- Perform diagnostics in response to VoIP user complaints.
- View trends that can help them with post-deployment growth and measure results against the service level agreement.

By introducing this feature to the SBC1000 and SBC2000, the SBC can now report QoE statistics for the SIP Trunk Provider leg of the call. Statistics such as delay, jitter and packet loss will be reported for the SIP Trunk Leg. This will be a feature unique in the product space.

The SBC1000/2000 with ASM (QoE Agent Server Gateway) will use the SQL server to modify the data used by the Microsoft QoE Services for quality monitoring. The QoE Agent Client gateways (SBC with or without ASM) will notify the QoE Agent Server Gateway with QoE stats for each call in order to update the database of the QoE server. Exchange between QoE Agent Server Gateway and QoE Agent Client Gateway will be handle using SIP NOTIFY.

**i IP Call Example - QOE Statistics Reporting**

**Lync (Leg 1) Client Mediation Server (Leg 2) SBC (Leg 3) SIP Trunk Provider**

- **Lync (Leg 1).** Statistics reported by Lync.
- **Client Mediation Server (Leg 2).** Statistics reported by Lync.
- **SBC (Leg 3).** Statistics reported by SBC 1000/2000.

**Prerequisites**


- A Lync 2013 deployment with Monitoring Reports fully implemented.
- A Sonus SBC 1000 or SBC 2000 with an ASM.

**i ASM Info**

An ASM module is only required on the SBC node functioning as the QoE Agent Server Gateway.

If there is more than one monitoring instance on the customer's topology, the customer will need to create an SBA for the QoE Server Agent ASM, and specify the SQL instance to use on the SBA configuration.

## Step 1: Update your SQL database rights

 The computer in this step must contain "Windows Powershell SQL extension".

The goal of this step is to allow an AD group to access and add information inside the Monitoring Server database.


1. Log on a computer of your domain with your **MS Lync Database Administrator** account.
2. Start Windows Powershell.
3. Update the Database SQL rights using the following commands:

```
Invoke-Sqlcmd -ServerInstance {Fqdn of your Sql Server}\{Instance of the Monitoring Database} -Database QoEMetrics -Query "GRANT UPDATE ON Session TO ServerRole; GRANT EXECUTE ON QoeInsertAudioStreamReport TO ServerRole; GRANT UPDATE ON Session TO ServerRole; EXEC QoEMetrics..sp_addrolemember ReportsReadOnlyRole, '{Your domain}\RTCComponentUniversalServices';"
```

Replace {Fqdn of your Sql Server} by your SQL Server FQDN  
Replace {Instance of the Monitoring Database} by your Monitoring Database Instance  
Replace {Your Domain} by your domain FQDN in cap

Eg:

```
Invoke-Sqlcmd -ServerInstance BE-SQL2.UX2013.COM\RTC2013REPORTS -Database QoEMetrics -Query "GRANT UPDATE ON Session TO ServerRole; GRANT EXECUTE ON QoeInsertAudioStreamReport TO ServerRole; EXEC QoEMetrics..sp_addrolemember ReportsReadOnlyRole, 'UX2013\RTCComponentUniversalServices';"
```

 If you don't know your SQL server FQDN and/or your monitoring database instance, execute the following Powershell commands on the Lync Front End Server machine

```
Get-CsService -MonitoringDatabase
```

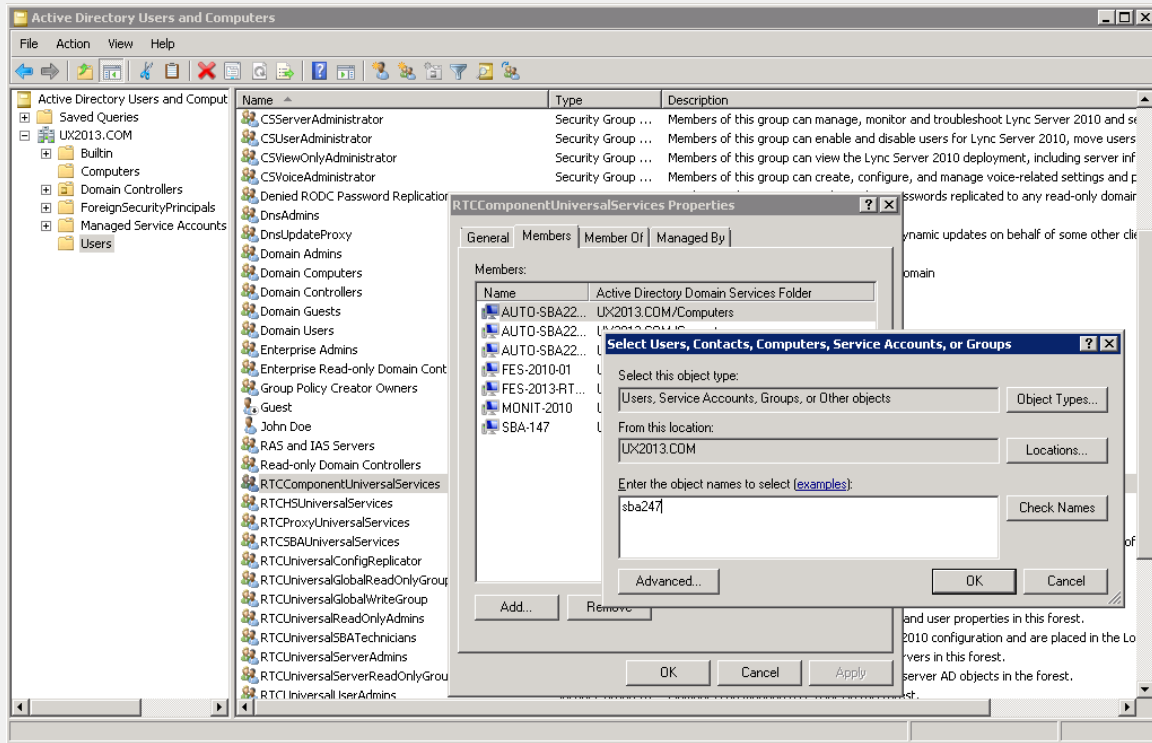
## Step 2: Update the QoE Agent Server ASM AD Rights

### Adding the ASM QoE Agent Server Machine Account to the RTCComponentUniversalServices Group

The goal of this step is to add the ASM into the group that we previously increase the database access.

1. Connect to the Domain Controller through Remote Desktop (RDP) using your regular AD credentials.
2. Launch the Active Directory Users and Computers snap-in.
3. Browse down to Users object (on the left pane).
4. Right-click *RTCComponentUniversalServices* group and select Properties
5. Click **ADD** in the the Members tab.
6. In the popup, enter the ASM machine name.
7. Click **Check Names**.

**Figure 2: Add to RTCComponentUniversalServices Group**



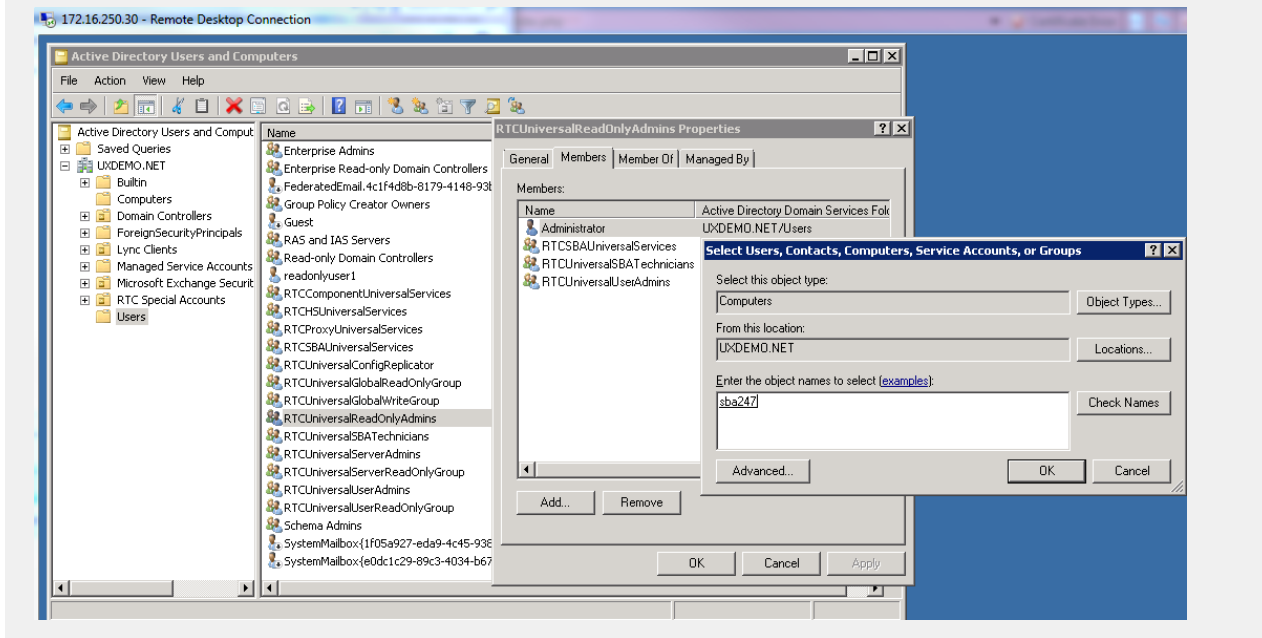
8. Click **OK**.
9. Click **OK** to close the properties screen.

## Adding the ASM QoE Agent ServerMachine Account to the RTCUniversalReadOnlyAdmins Group

The goal of this step is to add the ASM into the group which is allowed to read the topology in order to locate the monitoring database.

1. Connect to the Domain Controller through Remote Desktop (RDP) using your regular AD credentials.
2. Launch the Active Directory Users and Computers snap-in.
3. Browse down to Users object (on the left pane).
4. Right-click *RTCUniversalReadOnlyAdmins* group and select Properties
5. Click **ADD** in the Members tab.
6. In the popup, enter the ASM machine name.
7. Click **Check Names**.

**Figure 3: Add to RTCUniversalReadOnlyAdmins Group**

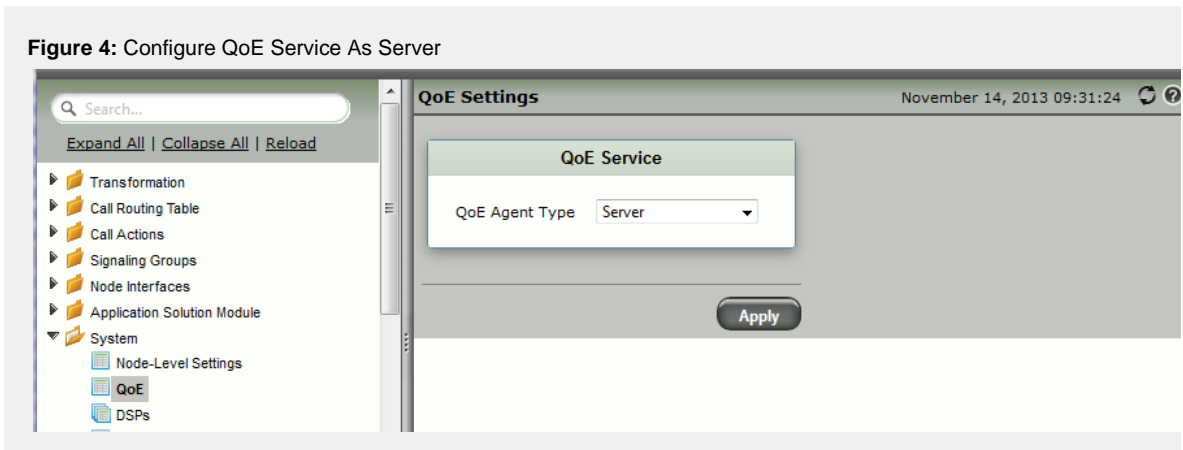


8. Click **OK**.
9. Click **OK** to close the properties screen.

### Step 3: Configure the QoE Agent Server Gateway

**i** ASM should have a Lync 2013 SBA image or a Lync 2013 RBA image loaded

1. [Configure the ASM IP Settings](#)
2. [Join the ASM to a Domain](#)
3. Perform Step 1 (Prepare the SBA). Refer to [Deploying the SBA](#).
4. You need to accept the SIP NOTIFY traffic from the QoE Agent Client Gateway by creating or reusing a signaling group (see [Creating and Modifying SIP Signaling Groups](#)) to accept SIP traffic from Client. The listening port will be the port provide in the System tab of the QoE Agent Client Gateways.
5. **To configure the QoE service as a Server:**
  - a. In the WebUI, click the **Settings** tab.
  - b. In the left navigation pane, go to **System > QoE**.

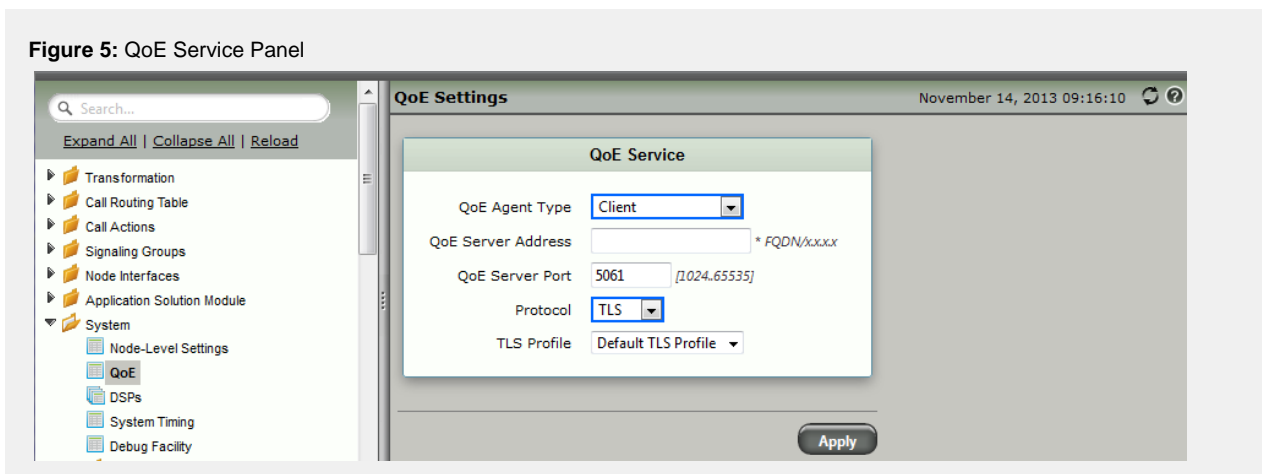


- c. In the QoE Service panel, select **Server** from the **QoE Agent Type** list box.
- d. Click **Apply**.

## Step 4: Configure the QoE Agent Client Gateway

To configure the QoE service as a client:

1. In the WebUI, click the **Settings** tab.
2. In the left navigation pane, go to **System > QoE**.

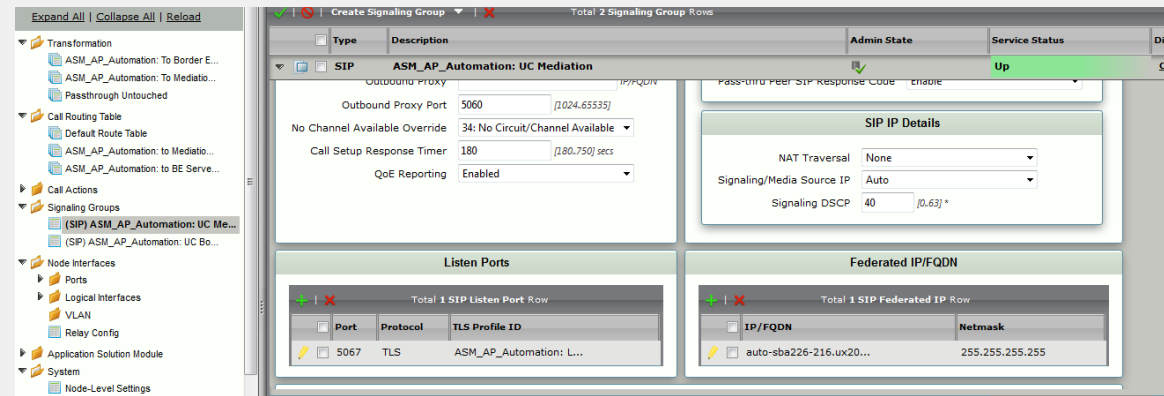


3. In the QoE Service panel:
  - a. Select **Client** in the **QoE Agent Type** list box.
  - b. Enter the FQDN or IP address of the QoE Agent Server gateway in the **QoE Server Address** text field.
  - c. Enter the port number for the Sip Signaling Group in the **QoE Agent Server Gateway Port** text field.
  - d. Select the transport protocol from the **Protocol** list box. If the transport protocol selected is TLS, make sure the QoE Server Address is FQDN (certificate common name is FQDN).
4. Click **Apply**.

To enable QoE reporting in the Lync SIP Signaling Group:

1. In the WebUI, click the **Settings** tab.
2. In the left navigation pane, go to **System > Signaling Groups > your Lync signaling group**.

**Figure 6: Enable QoE Reporting**



3. In the SIP Channels and Routing Panel, select **Enabled** from the **QoE Reporting** list box.
4. Click **Apply**.

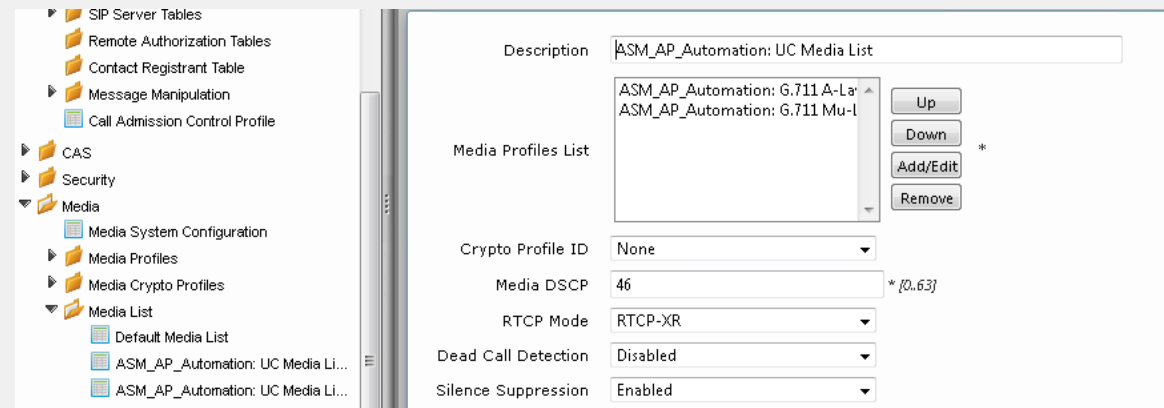
**i** This SIP Signaling Group is used to send QoE Information to the server. You can track the statistic by looking at the counter.

**To enable RTCP-XR:**

RTCP-XR must be enabled in each Media List through which the system administrator wants to receive QoE reports from the SBC 1000/2000.

1. In the WebUI, click the **Settings** tab.
2. In the left navigation pane, go to **System > Media > Media List > your SIP Trunk Media List**

**Figure 7: Enable RTCP-XR**



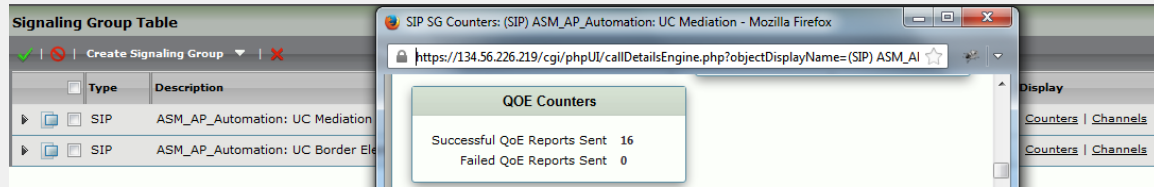
3. Select **RTCP-XR** in the **RTCP Mode** list box
4. Click **Apply**.

## Troubleshooting

### QoE Report Verification on the QoE Agent Client Gateway

You can track the status of a QoE message sent from the client using the SIP Signaling Group counter.

**Figure 8:** Verification on QoE Agent Client Gateway



If more than one signaling are reporting QoE reports, The counters will update on a signaling where the call came in the Gateway.

## QoE Report Verification on the QoE Agent Server Gateway

You can track the status of the QoE messages stored in the database by viewing the **Operational Status** page in the Application Solution Module section of the Tasks tab.

**Figure 9:** Verification on QoE Agent Server Gateway

