Installation and Configuration Guide

BlackBerry Collaboration Service

Version 12.7

Contents

About this guide

This guide describes how to install, configure, and administer the BlackBerry Collaboration Service.

This guide is intended for senior and junior IT professionals who are responsible for setting up and administering the BlackBerry Collaboration Service and BlackBerry UEM. Before using this guide, BlackBerry UEM should be installed and configured. For more information on installing BlackBerry UEM, see the BlackBerry UEM Installation and upgrade content. For more information about configuring BlackBerry UEM, see the BlackBerry UEM Configuration content.

What is BlackBerry Collaboration Service?

The BlackBerry Collaboration Service provides an encrypted connection between your organization's instant messaging server and the Enterprise IM app on BlackBerry 10 devices so that users can start and manage instant messaging conversations on their devices.

Preinstallation checklist

Verify that the following requirements are met before you install BlackBerry Collaboration Service 12 version 12.7.

When you verify requirements in this document, download the BlackBerry Collaboration Service and BlackBerry Enterprise IM App Compatibility Matrix.

Minimum requirements for installing BlackBerry Collaboration Service

The following requirements apply when you install the BlackBerry Collaboration Service in your organization.

Complete	Requirement
☐	• Verify that your organization's environment is running BlackBerry UEM version 12.7. • For information about planning your BlackBerry UEM installation, software requirements, hardware requirements, installation instructions, and additional tasks, see the BlackBerry UEM Installation and upgrade content.
☐	• Verify that you have logged in to BlackBerry UEM for the first time.
☐	• Verify that you have a supported instant messaging server.
☐	• Verify that your computer is running an operating system that supports BlackBerry Collaboration Service 12 version 12.7.

☐	• If you use IBM Sametime 8.5.2 or 9.0, on the computer that hosts the BlackBerry Collaboration Service, verify the following:
	  ◦ The IP address of the computer that hosts the BlackBerry Collaboration Service is added to the Community Connectivity document on the IBM Sametime server.
	  ◦ If your organization uses IBM Sametime with IBM Domino Directory, verify that IBM Notes Traveler 8.5.3 or later is installed in the environment.

☐	• If you use Microsoft Lync Server 2010, Microsoft Lync Server 2013 or Skype for Business, on the computer that hosts the BlackBerry Collaboration Service, verify the following are installed: ◦ Microsoft .NET Framework 4.5

Complete	Requirement
	◦ Microsoft Unified Communications Managed API 4.0 Runtime 64-bit, version 5.0.8308.*x* (UCMARuntimeSetup.exe) ◦ The required certificate in the Personal Certificate folder for the local computer account For more information about certificate requirements, visit support.blackberry.com/kb to read article KB37126.
☐	• Verify that the BlackBerry 10 devices are running BlackBerry 10 OS version 10.3.1 or later. To allow users in your environment to use the latest features available with BlackBerry Collaboration Service and BlackBerry Enterprise IM app version 3.3.0, verify that the BlackBerry 10 devices are running the required minimum BlackBerry 10 OS version. ◦ If the emoticon picker in chat windows is disabled in your organization, verify that the BlackBerry 10 devices are running BlackBerry 10 OS version 10.3.1 or later and BlackBerry Enterprise IM app version 3.3.0. ◦ If your organization uses BlackBerry Secure Connect Plus, verify that the BlackBerry 10 devices are running BlackBerry 10 OS version 10.3.2 or later. ◦ If your organization uses Skype for Business, verify that the BlackBerry 10 devices are running BlackBerry 10 OS version 10.3.1 or later and BlackBerry Enterprise IM app version 3.2.0 or later. ◦ If the BlackBerry Collaboration Service is enabled for certificate-based authentication in your Microsoft Lync Server or Skype for Business environment, verify that the BlackBerry 10 devices are running BlackBerry 10 OS version 10.3.1 or later and BlackBerry Enterprise IM app version 3.2.0 or later. ◦ If your organization displays disclaimers in chat windows, verify that the BlackBerry 10 devices are running BlackBerry 10 OS version 10.3.1 or later and BlackBerry Enterprise IM app version 3.2.0 or later.

Other installation considerations

Supported

- Current in-market releases of VMware and Microsoft Hyper-V Server are supported with the latest BlackBerry Collaboration Service version. For more information, support.blackberry.com/kb to read article KB29661.

- The BlackBerry Collaboration Service supports only TLS for TCP/IP connections in a Microsoft Lync Server and Skype for Business environments.

- The BlackBerry Collaboration Service supports remote access by administrators who use Remote Desktop Connection.

Unsupported

- The BlackBerry Collaboration Service does not support installation in a DMZ.

- You cannot install BlackBerry Collaboration Service until you log in to BlackBerry UEM for the first time to register your SRP ID and SRP authentication key.

- In a Microsoft Lync Server and Skype for Business environment, the BlackBerry Collaboration Service that supports BlackBerry 10 devices cannot be installed on a computer that already hosts the BlackBerry Collaboration Service for BES10 or BlackBerry Collaboration Service that supports BlackBerry OS (version 5.0 to 7.1) devices.

- A BlackBerry UEM that connects to multiple instances of the BlackBerry Collaboration Service does not support more than one type of instant messaging server. You must use the same type of instant messaging server, such as Microsoft Lync Server 2010, for each local or remote BlackBerry Collaboration Service instance that you connect to BlackBerry UEM.

- The BlackBerry Collaboration Service does not support installation on the computer that hosts the instant messaging server.

Planning a BlackBerry Collaboration Service installation

You can install the BlackBerry Collaboration Service on the computer that hosts BlackBerry UEM or on a separate computer. You should consider any effect on system resources before you decide where to install the BlackBerry Collaboration Service. If the environment has a mix of BES5 and BlackBerry UEM, the BES5 devices continue to use the BlackBerry Collaboration Service that came with BES5.

If you want to maximize the number of TCP connections available so that the BlackBerry Collaboration Service can respond to an increased amount of requests from the Enterprise IM app, you can install the BlackBerry Collaboration Service on a separate computer.

You can install multiple BlackBerry Collaboration Service instances, but you can install only one type of BlackBerry Collaboration Service for each BlackBerry UEM in your organization's environment. If you want to change the instant messaging environment (for example, from Microsoft Lync Server 2013 to Skype for Business) that an instance of the BlackBerry Collaboration Service uses, you must remove the existing instance of the BlackBerry Collaboration Service and select the new instant messaging server during the installation process.

Supported installation and upgrade paths

To upgrade BlackBerry Collaboration Service to BlackBerry Collaboration Service 12 version 12.7, you can use the following installation and upgrade paths:

- You can upgrade BlackBerry Collaboration Service 12 version 12.3 and later to BlackBerry Collaboration Service 12 version 12.7 using the setup application on the computer that hosts the previous version of the BlackBerry Collaboration Service.

- If you change the instant messaging server (for example, from Microsoft Lync Server 2013 to Skype for Business) that your BlackBerry Collaboration Service instance connects to, you must remove the existing BlackBerry Collaboration Service instances. You can then install BlackBerry Collaboration Service 12 version 12.7.

If you have multiple instances of BlackBerry Collaboration Service in your environment, you must complete this task on each computer that hosts an instance of the BlackBerry Collaboration Service.

Related information

How BlackBerry Collaboration Service supports high availability

The BlackBerry Collaboration Service supports an active-active high availability model to minimize service interruptions for BlackBerry Enterprise IM app users. You can install multiple instances of the BlackBerry Collaboration Service to provide load-balancing for authentication requests and to promote reliability.

A settings file is sent from the BlackBerry UEM environment to the BlackBerry Enterprise IM app when the BlackBerry 10 device is activated. The settings file contains a list of the BlackBerry Collaboration Service instances that are available in your environment. When a device user logs in to the BlackBerry Enterprise IM app, the app connects to one of the instances of the BlackBerry Collaboration Service included in the settings file. If an instance of the BlackBerry Collaboration Service becomes unavailable, the BlackBerry Enterprise IM app automatically tries to connect to the next available BlackBerry Collaboration Service instance.

For disaster recovery, such as if your instant messaging server pool is not available and a new instant messaging server pool is created, you must manually change the instant messaging server pool that the BlackBerry Collaboration Service connects to.

Related information

Requirements

Hardware requirements: BlackBerry Collaboration Service

The following requirements apply to the computer that you install the BlackBerry Collaboration Service on. For more information about calculating hardware requirements, see the BlackBerry UEM Installation and upgrade content.

Item	Description
Hardware requirements	• One processor, Quad Core, 2.4 GHz (4 cores) or 4 vCPU • 6 GB of available memory (for 1000 users or fewer) • 100 GB of disk space
	• Supports up to 5000 devices for each BlackBerry Collaboration Service instance, per computer • Install an additional 1 GB of memory for each 1000 users beyond the first 1000 • Less memory might be required for 1000 users if the Java memory footprint is reduced. For instructions, visit support.blackberry.com/kb to read article KB34951. • Additional memory might be required if users have a higher number of active conversations than is typical

Software requirements: BlackBerry Collaboration Service

The following requirements apply to your organization or the computer that you install the BlackBerry Collaboration Service on.

Item	Requirement
BlackBerry UEM	Verify that your organization is running BlackBerry UEM version 12.7.

Item	Requirement
Operating system	Verify that your computer is running an operating system that supports BlackBerry Collaboration Service 12 version 12.7.
	For more information about the supported operating systems, download the BlackBerry Collaboration Service and BlackBerry Enterprise IM App Compatibility matrix
Device software	• BlackBerry 10 OS version 10.2.1 or later. To allow users in your environment to use the latest features available with BlackBerry Collaboration Service 12 version 12.7 and BlackBerry Enterprise IM app version 3.3.0, verify that the BlackBerry 10 devices are running the required minimum BlackBerry 10 OS version.
	◦ If the emoticon picker in chat windows is disabled in your organization, verify that the BlackBerry 10 devices are running BlackBerry 10 OS version 10.3.1 or later and BlackBerry Enterprise IM app version 3.3.0.
	◦ If your organization uses BlackBerry Secure Connect Plus, verify that the BlackBerry 10 devices are running BlackBerry 10 OS version 10.3.2 or later.
	◦ If your organization uses Skype for Business, verify that the BlackBerry 10 devices are running BlackBerry 10 OS version 10.3.1 or later and BlackBerry Enterprise IM app version 3.2.0 or later.
	◦ If the BlackBerry Collaboration Service is enabled for certificate-based authentication in your Microsoft Lync Server or Skype for Business environment, verify that the BlackBerry 10 devices are running BlackBerry 10 OS version 10.3.1 or later and BlackBerry Enterprise IM app version 3.2.0 or later.
	◦ If your organization displays disclaimers in chat windows, verify that the BlackBerry 10 devices are running BlackBerry 10 OS version 10.3.1 or later and BlackBerry Enterprise IM app version 3.2.0 or later.
IBM Sametime	• IP address of the computer that hosts the BlackBerry Collaboration Service added to the Community Connectivity document on the IBM Sametime server
	• If your organization uses IBM Sametime with the IBM Domino Directory, IBM Notes Traveler 8.5.3 or later must be installed to perform remote searches using the Enterprise IM app.

Item	Requirement
Microsoft Lync Server 2010, Microsoft Lync Server 2013, and Skype for Business	• Microsoft .NET Framework 4.5 • Microsoft Unified Communications Managed API 4.0 Core Redistributable 64-bit (UCMARuntimeSetup.exe) • The required certificate installed in the Personal Certificate folder for the local computer account For more information about the Microsoft installation packages and installing the required certificate, see "Preparing the computer that hosts the BlackBerry Collaboration Service for use with Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business."

Related information

Preparing the computer that hosts the BlackBerry Collaboration Service for use with Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business,

Software requirements: Instant messaging server

Any of the following on-premise instant messaging servers:

- IBM Sametime 8.5.2 (Limited support)
- IBM Sametime 9.0
- Microsoft Lync Server 2010
- Microsoft Lync Server 2013
- Skype for Business

Supported features and environments

Item	Description
Virtual environment	Current in-market releases of VMware and Microsoft Hyper-V are supported with the latest BlackBerry Collaboration Service version. For more information, visit support.blackberry.com/kb to read article KB29661.
IP	The BlackBerry Collaboration Service supports only IPv4 and TLS for TCP/IP connections.

Item	Description
Remote access	The BlackBerry Collaboration Service supports remote access by administrators who use Remote Desktop Connection.

Unsupported environments

Item	Description
DMZ	The BlackBerry Collaboration Service does not support installation in a DMZ.
Installation	You cannot install BlackBerry Collaboration Service until you log in to BlackBerry UEM for the first time to register your SRP ID and SRP authentication key.
Computer that hosts the BlackBerry Collaboration Service	In a Microsoft Lync Server or Skype for Business environment, the BlackBerry Collaboration Service that supports BlackBerry 10 devices cannot be installed on a computer that already hosts the BlackBerry Collaboration Service for BES10 or the BlackBerry Collaboration Service that supports BlackBerry OS (version 5.0 to 7.1) devices.
Instant messaging server	- A BlackBerry UEM instance that connects to multiple instances of the BlackBerry Collaboration Service does not support more than one type of instant messaging server. You must use the same type of instant messaging server, such as Microsoft Lync Server 2010, for each local or remote BlackBerry Collaboration Service instance that you connect to BlackBerry UEM. - The BlackBerry Collaboration Service does not support installation on the computer that hosts the instant messaging server.

Preinstallation tasks

<div style="text-align: right">**5**</div>

Configure permissions for the service account

The service account is a Windows account that runs the services for the BlackBerry Collaboration Service. On the computer that you want to install the BlackBerry Collaboration Service on, you must configure permissions for the service account. Without the correct permissions, the BlackBerry Collaboration Service cannot run.

You can use the BlackBerry UEM service account to install the BlackBerry Collaboration Service.

Before you begin: If you do not use the BlackBerry UEM service account in Microsoft Active Directory, create a service account that you name BCSAdmin.

1. On the taskbar, click **Start** > **Administrative Tools** > **Computer Management**.

2. In the left pane, expand **Local Users and Groups**.

3. Navigate to the **Groups** folder.

4. In the right pane, double-click **Administrators**.

5. Click **Add**.

6. In the **Enter the object names to select** field, type the name of the service account (for example, BCSAdmin).

7. Click **OK**.

8. Click **Apply**.

9. Click **OK**.

10. On the taskbar, click **Start** > **Administrative Tools** > **Local Security Policy**.

11. In the left pane, expand **Local policies**.

12. Click **User rights agreement**.

13. Configure the following permissions for the service account:

    • Allow log on locally (if not assigned by default)

    • Log on as a service

Verifying database permissions to connect to the BlackBerry Collaboration Service

The BlackBerry Collaboration Service connects to the BlackBerry UEM database using the service account that you use to complete the installation process or the Microsoft SQL Server account that you specify during the installation process. The setup application might need to update the BlackBerry UEM database during the installation process, so the service account or Microsoft SQL Server account must have permissions on the server to update the BlackBerry UEM database.

You can configure database permissions using Microsoft SQL Server roles. You must verify that the service account or Microsoft SQL Server account is a member of the db_owner database role for the BlackBerry UEM database.

Preparing the computer that hosts the BlackBerry Collaboration Service for use with Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business

If you plan to install the BlackBerry Collaboration Service for use with Microsoft Lync Server 2010 or 2013 or Skype for Business, you must verify that the computer that you install the BlackBerry Collaboration Service on meets specific requirements.

Before you install the BlackBerry Collaboration Service, you must perform the following actions in the order that they are listed:

1. Install and enable Microsoft .NET Framework 4.5 or 4.6.

    -   On a computer that is running Windows Server 2012 or Windows Server 2016, use the Windows Server Manager to add Microsoft .NET Framework as a feature. When the installation prompts you to restart the computer, click **Yes**.

    -   On a computer that is running Windows Server 2008, complete the following steps:

        1. Download Microsoft .NET Framework 4.5. To download the file, visit www.microsoft.com/downloads.
        2. Double-click **dotNetFx45_Full_setup.exe**. Complete the instructions on the screen.

2. Complete one of the following tasks using Windows Server Manager:

    -   If you install the BlackBerry Collaboration Service on a computer that is running Windows Server 2008, install **Desktop Experience**. When the installation prompts you to restart the computer, click **Yes**.

    -   If you install the BlackBerry Collaboration Service on a computer that is running Windows Server 2012, install **Media Foundation**. When the installation prompts you to restart the computer, click **Yes**.

3. Download Microsoft Unified Communications Managed API 4.0 Runtime 64-bit, version 5.0.8308.*x* (UcmaRuntimeSetup.exe). To download the file, visit www.microsoft.com/downloads and search for ID=34992.

   a   Install **UcmaRuntimeSetup.exe**.

   Optionally, you can remove the following components using the **Programs and Features** program:

   - Microsoft Server Speech Platform Runtime (x64)

   - Microsoft Server Speech Recognition Language - TELE (en-US)

   - Microsoft Server Speech Text to Speech Voice (en-US, Helen)

   - Microsoft Speech Platform VXML Runtime (x64)

4. Install the required certificate in the Personal Certificate folder for the local computer account.

   For more information about certificate requirements, visit support.blackberry.com/kb to read article KB37126.

Related information
Create a Personal Certificate for the local computer account for the BlackBerry Collaboration Service, on page 21

Provisioning the BlackBerry Collaboration Service as a trusted application

If you install Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business for instant messaging, you must manually provision the BlackBerry Collaboration Service as a trusted application in Microsoft Active Directory. For more information about using manual provisioning in your environment, visit support.blackberry.com/kb to read article KB28474.

If your organization's environment includes multiple instances of the BlackBerry Collaboration Service, you must provision each instance as a trusted application. If you change the listening port number or if the FQDN of the instant-messaging pool changes, you must repeat the provisioning task.

Manually provision the BlackBerry Collaboration Service as a trusted application using Lync PowerShell

Before you begin:
- Verify that the account that you use to complete this task is a member of the RTCUniversalServerAdmins group.

- For more information about manually provisioning the BlackBerry Collaboration Service as a trusted application, visit support.blackberry.com/kb to read article KB28474.

1. Log in to the computer that hosts the Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business using an account with RTCUniversalServerAdmins group permissions.

2. Open a Lync PowerShell window and confirm if a trusted application pool exists. Complete the following steps:

    a. To verify if a virtual application pool exists for the BlackBerry Collaboration Service, type **Get-CsTrustedApplicationPool | Where-Object {$_.Applications -like "*rimmsconnector*"}**. Press **Enter**. If a pool exists, continue to step 3e.

3. On the computer that hosts the Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business, create the trusted application pool.

    a. To obtain the SiteID of your Microsoft Lync Server, type **Get-CsSite**. Press **Enter**. Record the SiteID.

    b. To display the Registrar service value for a selected site, type **Get-CsSite <*SiteId*> | Select-Object -ExpandProperty Services**. Press **Enter**. Record the Registrar service value.

    c. To configure the trusted application entry for the newly created trusted application pool for the BlackBerry Collaboration Service, type **New-CsTrustedApplicationPool -Identity <*YourPoolFQDN*> -Registrar Registrar:<*FQDNRegistrarService*> -Site <*SiteID*> -ComputerFQDN <*BlackBerryCollaborationServiceFQDN*> -ThrottleAsServer $true -TreatAsAuthenticated $true -RequiresReplication $false**. Press **Enter**.

> • Where *YourPoolFQDN* is the FQDN of the virtual Application pool of the BlackBerry Collaboration Service instances.
>
> • Where *SiteID* is the SiteID that was recorded in step 3a.
>
> • Where *FQDNRegistrarService* is the value recorded in step 3b.
>
> • Where *BlackBerryCollaborationServiceFQDN* is the FQDN of the BlackBerry Collaboration Service.

    d. To create a trusted application entry, type **New-CsTrustedApplication -ApplicationId RIMMSConnector -TrustedApplicationPoolFqdn <*YourPoolFQDN*> -Port <*BlackBerryCollaborationServiceListenPort*>**. Press **Enter**.

    Where *BlackBerryCollaborationServiceListenPort* is the port on which the BlackBerry Collaboration Service listens for response from the Microsoft Lync Server. The default port number is 65061.

    e. If your organization's environment has multiple instances of the BlackBerry Collaboration Service, add the FQDNs of the additional instances to your application pool. Type **New-CsTrustedApplicationComputer -Identity <*BlackBerryCollaborationServiceFQDN*> -Pool <*YourPoolFQDN*>**. Press **Enter**.

    f. Repeat step 3e for each BlackBerry Collaboration Service instance in your organization's network.

    g. To publish the change to the Microsoft Lync Server environment, type **Enable-CsTopology**. Press **Enter**.

4. On the computer that hosts the Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business, obtain the GRUU for the TrustedApplication.

    a. To list the trusted application pools in your environment, type **Get-CsTrustedApplicationPool**. Press **Enter**.

    b. To list the Computer GRUUs within a specific pool, type **$a = Get-CsTrustedApplication -Identity "<*YourPoolFQDN*>/urn:application:rimmsconnector"**. Press **Enter**.

    To view the FQDN and GRUU for each computer, type **$a.ComputerGruus | fl**

    The following is an example of a ComputerGRUU:
    sip:<*BlackBerryCollaborationServiceFQDN*>@<*domain_name*>;gruu;opaque=srvr:rimmsconnector:<*characters*>

    c.   Record the FQDN and GRUU for each computer in the pool.

5.   If the BlackBerry Collaboration Service is installed, complete the following steps on the computer that hosts the BlackBerry Collaboration Service:

    a.   Navigate to *<drive>*:\Program Files\BlackBerry\BlackBerry Collaboration Service\BBIM\Servers\instance\config.

    b.   In a text editor (run as administrator), open the **rimpublic.property** file.

    c.   At the end of the file, type **improxy.gruu=sip:<*BlackBerryCollaborationServiceFQDN*>@<*domain_name*>;gruu;opaque=srvr:rimmsconnector: <*characters*>** as recorded in step 4c.

    d.   Save and close the **rimpublic.property** file.

    e.   In Windows services, restart the BlackBerry Collaboration Service.

    f.   Verify that the GRUU is logged in the BBIM log files. Search for the term gruu.

    g.   Repeat steps a to f for each BlackBerry Collaboration Service instance.

Create a Personal Certificate for the local computer account for the BlackBerry Collaboration Service

1.   Open the Microsoft Management Console.

2.   Click **Console Root**.

3.   Click **File** > **Add/Remove Snap-in**.

4.   In the **Available snap-ins** list, click **Certificates**. Click **Add**.

5.   In the **Certificates snap-in** dialog, select the **Computer account** option. Click **Next**.

6.   In the **Select Computer** dialog, select the **Local computer** option. Click **Finish**.

7.   Click **OK**.

8.   Expand **Certificates (Local Computer)** > **Personal**.

9.   Right-click **Certificates**. Click **All Tasks** > **Request New Certificate**.

10.   In the **Certificate Import Wizard**, click **Next**.

11.   Click **Active Directory Enrollment Policy**, and click **Next**.

12.   Perform one of the following tasks:

Environment	Steps

Skype for Business	1. Select an appropriate web server template from the available templates.
	
	   a Click **Details** to verify that the Server Authentication is displayed in the Application Policies section.
	
	   b In the **Application policies** section, verify that **Server Authentication** is listed. If Server Authentication is not listed, select a different web server template. Contact your CA administrator for more information about templates.
	
	2. Click **More information is required to enroll for this certificate. Click here to configure settings**.
	
	3. On the **Subject** tab, in the **Subject name** section,
	
	    • Click the **Type** drop-down list. Select **Common name**.
	    • In the **Value** field, type the FQDN of the computer that hosts the BlackBerry Collaboration Service
	    • Click **Add** >.
	
	4. In the **Alternative name** section,
	
	    • Click the **Type** drop-down list. Select **DNS**.
	    • In the **Value** field, type the FQDN of the computer that hosts the BlackBerry Collaboration Service.
	    • Click **Add** >.
	    • In the **Value** field, type the BlackBerry Collaboration Service Trusted Pool FQDN as was recorded in step 4c of *Manually provision the BlackBerry Collaboration Service as a trusted application using Lync PowerShell*.
	    • Click **Add** >.
	    • Click **Apply**.
	    • Click **OK**.
	    • Click **Enroll**.

Microsoft Lync Server 2010 or Microsoft Lync Server 2013	1. Select an appropriate computer template from the available templates.
	
	   a Click **Details** to verify that the Server Authentication is displayed in the Application Policies section.
	
	   b In the **Application policies** section, verify that **Server Authentication** is listed. If Server Authentication is not list, select a template that includes Server Authentication. Contact your CA administrator for more information about templates.

Environment	Steps
	2. Click **Enroll**.
	3. Click **Finish**.

13. Click **Apply**.

After you finish: For more information about certificate requirements, visit support.blackberry.com/kb to read article KB37126.

Related information

Manually provision the BlackBerry Collaboration Service as a trusted application using Lync PowerShell, on page 19

Prerequisites: Installing the BlackBerry Collaboration Service software

Verify that you have the following system information available:

- For the BlackBerry UEM database: the database name, the database server name, and if the database server uses static ports, the port number.

- For the instant messaging server: the port number and either the host name of the instant messaging server or the FQDN of the instant messaging pool.

Accessing the BlackBerry Collaboration Service software

You can open the BlackBerry Collaboration Service software folder in the BlackBerry UEM version 12.7 installation files located at *<drive>*:\BlackBerry\BlackBerry Collaboration Service *<version>*\bundle *<bundle number>*\ and run the executable, or complete the following steps:

1. In a browser, navigate to docs.blackberry.com/enterprise-im.

2. In the **To view software for a BlackBerry product, please select a product from the drop down menu** list, click **BlackBerry Collaboration Service**.

3. Click **Next**.

4. Select the BlackBerry Collaboration Service software file to download.

Installing the BlackBerry Collaboration Service software

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Install the BlackBerry Collaboration Service

During the installation process, you might need to restart the computer.

Before you begin:
- Verify that the service account has local administrator permissions on the computer that you install the BlackBerry Collaboration Service on.

- Verify that the computer that you install the BlackBerry Collaboration Service on has the required software and prerequisite files, and certificates are installed.

1. Log in to the computer that you want to install the BlackBerry Collaboration Service on using the service account that has correct permissions. The service account runs the BlackBerry Collaboration Service services.

2. In the BlackBerry Collaboration Service installation files located at *<drive>*:\BlackBerry\BlackBerry UEM *<version number>*\bcs, extract the zipped installation files.

3. In the extracted BlackBerry Collaboration Service software files (*<drive>*:\BlackBerry\BlackBerry Collaboration Service *<version number>*\bundle*<bundle number>*), double-click **Setup.exe**. If a Windows message appears and requests permission for Setup.exe to make changes to the computer, click **Yes**.

4. In the **License agreement** dialog box, perform the following actions:

    a. In the **Customer information** section, specify information for your organization and select your country or region. The setup application uses the organization name that you specify when it creates the certificate for the BlackBerry Collaboration Service.

    b. In the **License agreement** section, read the license agreement. To accept the license agreement, select **I accept the terms of the license agreement**.

    c. Click **Next**.

5. In the **Database information** dialog box, specify information for the Microsoft SQL Server name and database that BlackBerry UEM uses. Click **Next**.

6. In the **Instant messaging settings** dialog box, perform the following actions:

    a. In the **Instant messaging server** drop-down list, select the instant messaging server that is in your organization's environment.

    b. In the **BlackBerry Collaboration Service port** field, change the port number if necessary. By default, the BlackBerry Collaboration Service uses port 8181 to listen for connections from the Enterprise IM app.

   c.   If applicable, in the **Host** field, type the host name of the instant messaging server.

   d.   In the **Port** field, type the port number of the instant messaging server.

   e.   If applicable, in the **Pool name** field, type the FQDN of the instant messaging pool.

   f.   Click **Next**.

7.   In the **Preinstallation checklist** dialog box, read and verify the information. Click **Next**.

8.   In the **Accounts and folders** dialog box, perform the following actions:

   a.   In the **Password** field, type the password for the service account that you used in step 1.

   b.   If necessary, change the location of the installation folder and log-file folder.

   c.   Click **Next**.

9.   In the **Summary** dialog box, verify that the information is correct. Click **Install**.

10.   If the BlackBerry Collaboration Service is not provisioned as a trusted application and a personal certificate for the local computer account is not created, in the **Finalize installation** dialog box, verify the **Start the BlackBerry Collaboration Service** check box is cleared and click **Finish**.

After you finish:

- If necessary, provision the BlackBerry Collaboration Service as a trusted application.
- If necessary, create a personal certificate for the local computer account for the BlackBerry Collaboration Service.
- To check if the BlackBerry Collaboration Service is installed, you can check the following:

  - The collaboration settings are displayed in the management console at **Settings** > **Collaboration** on the **Settings** and **Device settings** tabs.
  - The BlackBerry Collaboration Service appears in the Services list.

- If necessary, in Windows Services, start the BlackBerry Collaboration Service.

Related information

Postinstallation tasks

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Add the GRUU string to the rimpublic.property file

1. Log in to the computer that hosts the BlackBerry Collaboration Service as an administrator.

2. Navigate to *<drive>*:\Program Files\BlackBerry\BlackBerry Collaboration Service\BBIM\Servers\instance\config.

3. In a text editor, open the **rimpublic.property** file.

4. At the end of the file, type
   improxy.gruu=sip:<*BlackBerryCollaborationServiceFQDN*>@<*domain_name*>;gruu;opaque=srvr:rimmsconnector:<*cha racters*> as recorded in step 4c of Manually provision the BlackBerry Collaboration Service as a trusted application using Lync PowerShell.

5. Save and close the **rimpublic.property** file.

6. In Windows services, restart the BlackBerry Collaboration Service.

7. Verify that the GRUU is logged in the BBIM log files. Search for the term gruu.

8. Repeat steps 1 to 7 for each BlackBerry Collaboration Service instance.

Start the BlackBerry Collaboration Service service

1. On the computer that hosts the BlackBerry Collaboration Service, on the taskbar, click **Start** > **Administrative Tools** > **Services**.

2. In the **Services (local)** pane, right-click **BlackBerry UEM - BlackBerry Collaboration Service**. Click **Start**.

View the status of BlackBerry Collaboration Service instances

You can view the status of each BlackBerry Collaboration Service instance in your domain.

1. In the management console, on the menu bar, click **Settings**.

2. In the left pane, click **Infrastructure** > **Instances**.

   For each BlackBerry Collaboration Service instance in the domain, you can view the following information:

   - The status of each BlackBerry Collaboration Service instance (running or stopped)
   - The version of the BlackBerry Collaboration Service instance

3. To refresh the information on the page, click ↺.

Accessing the BlackBerry Enterprise IM app for BlackBerry 10 devices

1. In a browser, navigate to docs.blackberry.com/enterprise-im.

2. In the **To view software for a BlackBerry product, please select a product from the drop down menu** list, click **BlackBerry Enterprise IM for Microsoft Lync, IBM Sametime v3 for BlackBerry 10 devices**.

3. Click **Next**.

4. Download the latest version of the BlackBerry Enterprise IM app.

After you finish: For information about making apps available on devices, see the BlackBerry UEM Administration content.

Additional information

Sending updated device settings to BlackBerry 10 devices

You can add and remove BlackBerry Collaboration Service instances in your organization's environment. After you add or remove an instance, an updated device settings file must be sent to BlackBerry 10 devices. The device settings file provides BlackBerry 10 devices with information about available BlackBerry Collaboration Service instances in your organization's environment.

Update the device settings when BlackBerry Collaboration Service instances are added and removed

When you add or remove BlackBerry Collaboration Service instances in your organization's environment, you must send the updated information to BlackBerry 10 devices.

1. In the management console, on the menu bar, click **Settings**.

2. In the left pane, click **Collaboration** > **Device settings**.

3. Click **Update device settings**.

Related information
Enable certificate-based authentication mode, on page 30

Enabling certificate-based authentication mode

The BlackBerry Collaboration Service can use one of the following two authentication modes in the environment:

- Certificate-based
- Username and password

By default, the BlackBerry Collaboration Service uses the BlackBerry 10 device user's username and password to log in to the BlackBerry Enterprise IM app.

You can enable certificate-based authentication in your environment for devices that are running BlackBerry 10 OS version 10.3.1 or later and use the BlackBerry Enterprise IM app version 3.2.0 or later to log in to the instant messaging server. If certificate-based authentication is enabled, only BlackBerry 10 devices using BlackBerry Enterprise IM apps that support certificate-based authentication can authenticate with the BlackBerry Collaboration Service. Enabling certificate-based authentication disables the username and password authentication mode.

Steps to set up certificate-based authentication

When you set up certificate-based authentication, you perform the following actions:

Step	Action
1	Create a single sign-on profile to configure how BlackBerry 10 devices authenticate with the BlackBerry Collaboration Service instances in your environment.
2	If necessary, rank profiles.
3	Assign profiles to user accounts or user groups.

Step	Action
4	Enable the BlackBerry Collaboration Service for certificate-based authentication.

Related information

Enable certificate-based authentication mode, on page 30
Create a single sign-on profile to authenticate with the BlackBerry Collaboration Service, on page 30

Setting up single sign-on authentication for BlackBerry 10 devices

Using a single sign-on profile, you can enable BlackBerry 10 devices to authenticate automatically with domains and the BlackBerry Collaboration Service instances in your organization's network. After you assign a single sign-on profile, the user is prompted for a username and password the first time they try to access a secure domain that you specified. The login information is saved on the user's device and used automatically when the user tries to access any of the secure domains specified in the profile. When the user changes the password, the user is prompted the next time they try to access a secure domain.

Related information

Create a single sign-on profile to authenticate with the BlackBerry Collaboration Service, on page 30

Create a single sign-on profile to authenticate with the BlackBerry Collaboration Service

1. In the management console, on the menu bar, click **Policies and Profiles**.

2. Click **+** beside **Single sign-on**.

3. Type a name and description for the profile.

4. Click the **BlackBerry** tab.

5. Under **Trusted domains**, click **+**.

6. In the **Name** field, type a name for the configuration. For example, All BlackBerry Collaboration Service instances.

7. In the **Domain** field, type a trusted subdomain or domain using wildcards. For example, *.example.com or *.<*subdomain*>.example.com.

8. Click **Add**.

After you finish: If you create more than one single sign-on profile, rank the profiles. For more information about ranking profiles, see the BlackBerry UEM Administration content.

Enable certificate-based authentication mode

Before you begin:

By default, certificate-based authentication mode is turned off.

1. On the computer that hosts the BlackBerry Collaboration Service, navigate to *<drive>*:\Program Files\BlackBerry \BlackBerry Collaboration Service\BBIM\Servers\instance\config.

2. In a text editor (run as administrator), open the **rimpublic.property** file.

3. At the end of the file, type **improxy.eimserver.cba**=**true**.

4. Save and close the rimpublic.property file.

5. In Windows services, restart the BlackBerry Collaboration Service instance.

6. Send an updated device settings file to the BlackBerry 10 devices using the mangement console.

After you finish:
- If you have multiple instances of BlackBerry Collaboration Service, complete steps 1-5 on each computer that hosts an instance of the BlackBerry Collaboration Service.

- To turn off certificate-based authentication, remove the **improxy.eimserver.cba**=**true** property or set the command to false.

Related information
Update the device settings when BlackBerry Collaboration Service instances are added and removed, on page 29

Displaying a disclaimer in BlackBerry Enterprise IM one-on-one and multiparty chats

You can configure a disclaimer to display whenever a user creates or receives a new incoming BlackBerry Enterprise IM one-on-one and multiparty chat. The BlackBerry Collaboration Service sends the disclaimer text to the user's device when the user logs in to the BlackBerry Enterprise IM app. When you have configured the disclaimer, it appears at the top of the chat window on BlackBerry 10 devices that have the BlackBerry Enterprise IM app version 3.2.0 or later installed.

When you configure the disclaimer file, make sure that it meets the following requirements:

- Less than 1024 bytes or 256 UTF-8 characters.

- Optionally, UTF-8 encoded.

- Named disclaimer.txt. The file name is not case-sensitive.

- Saved to *<drive>*:\Program Files\BlackBerry\BlackBerry Collaboration Service\BBIM\Servers\instance\config on each computer that hosts the BlackBerry Collaboration Service.

When the disclaimer.txt file is configured, the BBIM log files log that the disclaimer is created. If the disclaimer.txt file is larger than 1024 bytes or empty, the BBIM log files log the error message that the disclaimer.txt file is not being used because it is too large or zero bytes.

Display a disclaimer in BlackBerry Enterprise IM one-on-one and multiparty chats

1. Create a text file. If necessary, create the text file using administrator permissions.

2. Type your disclaimer message.

3. Click **File** > **Save as**.

4. Navigate to *<drive>*:\Program Files\BlackBerry\BlackBerry Collaboration Service\BBIM\Servers\instance\config. Click **Save**.

5. In Windows Services, restart the BlackBerry Collaboration Service.

After you finish:
- If you have multiple instances of BlackBerry Collaboration Service, complete these steps on each computer that hosts an instance of the BlackBerry Collaboration Service.
- To turn off the disclaimer message, delete or rename the .txt file. In Windows Services, restart the BlackBerry Collaboration Service.

Emoticons in Skype for Business

Skype for Business provides emoticons that can be used in instant messaging conversations with other Skype for Business users. Users can use short cuts or select an emoticon from an emoticon selector to send to a contact in a chat. Sending an emoticon to another user results in emoticons displaying in one of the following ways:

- If both contacts are in a Skype for Business environment and the BlackBerry 10 devices are running BlackBerry 10 OS version 10.3.1 or later and BlackBerry Enterprise IM app version 3.2.0 or later, the emoticon is displayed in the recipient's chat window.
- If one of the contacts is in a Microsoft Lync Server 2010 or Microsoft Lync Server 2013 environment, that contact receives a text shortcut for the emoticon that is not available in their emoticon set.

Disable the emoticon picker in Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business

You can disable the emoticon picker for users in your organization. Disabling the emoticon picker provides users with a larger chat message field.

Before you begin: Verify that the BlackBerry 10 devices are running BlackBerry 10 OS version 10.3.1 or later and BlackBerry Enterprise IM app version 3.3.0.

1. Log in to the computer that hosts the BlackBerry Collaboration Service as an administrator.

2. Navigate to *<drive>*:\Program Files\BlackBerry\BlackBerry Collaboration Service\BBIM\Servers\instance\config.

3. In a text editor, open the **rimpublic.property** file.

4. At the end of the file, type **improxy.eimserver.hideemoticon**=**true**.

5. Save and close the **rimpublic.property** file.

6. In **Windows services**, restart the BlackBerry Collaboration Service instance.

7. Send an updated device settings file to the BlackBerry 10 devices.

After you finish:

- If you have multiple instances of BlackBerry Collaboration Service, complete these steps on each computer that hosts an instance of the BlackBerry Collaboration Service.

- To display the emoticon picker, remove the **improxy.eimserver.hideemoticon**=**true** property, comment it out, or set the command to false.

Turn off avatar and contact synchronization for BlackBerry Enterprise IM app users using IBM Sametime

When users log in to the BlackBerry Enterprise IM app, the app initiates synchronization of the address book entries and avatars. Users with many contacts might experience intermittent connections during the synchronization process.

When you turn off avatar and contact synchronization for the BlackBerry Enterprise IM app, the address book is not synchronized with the BlackBerry Enterprise IM app. Users will not be able to press the Call or Email button to contact other users because this information is not synchronized.

1. On the computer that hosts the BlackBerry Collaboration Service, navigate to *<drive>*:\Program Files\BlackBerry \BlackBerry Collaboration Service\BBIM\Servers\instance\config.

2. In a text editor (run as administrator), open the **rimpublic.property** file.

3. At the end of the file, complete one of the following:

   - To turn off synchronization of avatars with the BlackBerry Enterprise IM app, type **improxy.avatar.sync**=**false**.

   - To turn off address book synchronization with the BlackBerry Enterprise IM app, type **improxy.addressbook.sync**=**false**.

4. Save and close the **rimpublic.property** file.

5. In Windows services, restart the BlackBerry Collaboration Service.

Configuring the BlackBerry Collaboration Service

Specify the inactivity timeout limit for instant messaging sessions

The BlackBerry Collaboration Service closes instant messaging sessions that exceed the inactivity timeout limit. The minimum value is 1200000 ms.

1. In the management console, on the menu bar, click **Settings** > **Collaboration**.

2. In the left pane, click **Device settings**.

3. In the **Inactivity timeout (milliseconds)** field, type a value, in milliseconds.

4. Click **Save**.

Specify the maximum number of instant messaging sessions that can be open at the same time

To control bandwidth and resource consumption in your organization's environment, you can specify the number of instant messaging sessions that can be open between the BlackBerry Collaboration Service and the instant messaging server at the same time. By default, the maximum number of instant messaging sessions that can be open at the same time is 5000.

1. In the management console, on the menu bar, click **Settings** > **Collaboration**.

2. In the left pane, click **Device settings**.

3. In the **Maximum simultaneous sessions** field, type the maximum number of instant messaging sessions that can be open at the same time.

4. Click **Save**.

Change the instant messaging server pool that the BlackBerry Collaboration Service connects to

You might need to change the instant messaging server pool that the BlackBerry Collaboration Service connects to in the following scenarios:

- You entered an incorrect server pool name during the BlackBerry Collaboration Service installation
- For disaster recovery, you need to point to a new Microsoft Lync Server server pool

Make sure that you have a valid certificate. For more information about installing a certificate, see Preparing the computer that hosts the BlackBerry Collaboration Service for use with Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business.

If you change the IM listening port, you must manually provision the BlackBerry Collaboration Service as a trusted application. For more information about manually provisioning the BlackBerry Collaboration Service, see Manually provision the BlackBerry Collaboration Service as a trusted application using Lync PowerShell.

1. In the management console, on the menu bar, click **Settings** > **Collaboration**.

2. In the left pane, click **Device settings**.

3. In the **IM server pool name** field, type the FQDN of the pool of instant messaging servers.

4. In the **IM server port** field, type the port number of the instant messaging server or the port number of the pool of instant messaging servers.

5. If necessary, in the **Listening port** field, type the inbound listening port that the BlackBerry Collaboration Service uses.

6. Click **Save**.

7. In Windows services, restart the BlackBerry Collaboration Service instance. If you have multiple instances of BlackBerry Collaboration Service, restart the BlackBerry Collaboration Service on each computer that hosts an instance of the BlackBerry Collaboration Service.

Related information
Preparing the computer that hosts the BlackBerry Collaboration Service for use with Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business, on page 18

BlackBerry Collaboration Service connection types and port numbers

Item	Connection type	Default port number	UI where you can configure the connection
Outgoing data connections to Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business	TCP (TLS or MTLS)	5061	management console
Outgoing data connections to Microsoft Active Directory for BlackBerry Collaboration Service in Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business environments	TCP	389, 3268	
Incoming data connections from the Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business	TCP (TLS or MTLS)	65061	management console
Incoming data connections from, and outgoing data connections to, IBM Sametime	TCP/IP	1516	management console
Incoming data connections from the Enterprise IM app	TLS/HTTPS	8181	
Incoming data connections from, and outgoing data connections to, the BlackBerry UEM database that a Microsoft SQL Server hosts	TCP	1433 (for static port)	Windows registry On a 64-bit version of Windows: HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Research In Motion\BlackBerry Enterprise Service\Database\Port
Incoming data connections from instances of BlackBerry UEM to query the BlackBerry Collaboration Service status	TLS/HTTPS	8182	

About the BBIM log files

You can use the BBIM log files to identify and troubleshoot issues with the BlackBerry Collaboration Service or BlackBerry 10 devices that use instant messaging in your organization's environment. The BBIM logging capabilities allow you to:

- Track the activity of the BlackBerry Collaboration Service instance
- Track device statistics such as number of logins, unsuccessful logins, and chats

BBIM logging is set at the global level. When you enable BBIM logging in the management console, BBIM logging is turned on for all instances of the BlackBerry Collaboration Service in your organization's environment. The BBIM log file is created and is stored daily. If you install multiple BlackBerry Collaboration Service instances in your organization, each instance creates and stores its own log files.

By default, name of the log file is *<server_name>_<log_type>_*01_*<yyyymmdd>_<log_number>.<file extension>* (for example, EIMServer_BBIM_01_20150303_0001.txt).

Additional log files are created when you install the BlackBerry Collaboration Service. By default, these log files are stored in C: \Program Files\BlackBerry\BlackBerry Collaboration Service\Logs\Installer on each computer that an instance of the BlackBerry Collaboration Service is installed on.

Turn on BBIM logging

When you enable BBIM logging in the management console, BBIM logging is turned on for all instances of the BlackBerry Collaboration Service in your organization's environment.

1. In the management console, on the menu bar, click **Settings** > **Collaboration**.
2. Click **Device settings**.
3. Select the **BBIM logging turned on** checkbox.
4. Click **Save**.
5. In Windows services, restart the BlackBerry Collaboration Service.

Troubleshooting the BlackBerry Collaboration Service

Enabling development-level logging for the BlackBerry Collaboration Service

You can configure advanced logging for the BlackBerry Collaboration Service using the rimpublic.property file to help you troubleshoot issues with the BlackBerry Collaboration Service. By default, the logging level for the BlackBerry Collaboration Service is DEBUG.

When you enable development-level logging, the log files display DEV. You can also increase the verbosity of the log files that are logged. For instructions on enabling development-level logging and increasing the verbosity of the log files, visit support.blackberry.com/kb to read article KB04939.

BlackBerry Collaboration Service starts and then stops when used with Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business

Possible cause	Possible solution
If the BBIM log file displays `Error: No certificates were found matching the required criteria`, then a valid certificate is not available in the Windows certificate keystore.	Install a new certificate. For more information about installing the required certificate, visit support.blackberry.com/kb to read article KB37126.
If the BBIM log file displays `OCSConnector configuration complete with error=4, desc=Error: GRUU was not set in OCSConnector`	Complete the following tasks: 1. Manually provision the BlackBerry Collaboration Service as a trusted application and trusted application pool.

Possible cause	Possible solution
`Terminating BCS process using command: net stop "BES - BlackBerry Collaboration Service"`, the BlackBerry Collaboration Service was not provisioned as a trusted application.	2. Add the gruu string to the rimpublic.property file. For more information about adding the gruu string to the rimpublic.property file, visit support.blackberry.com/kb to read article KB37115.
If the BBIM log file displays `BlackBerry OCSConnector configuration timeout`, the OCSConnector.exe process did not complete the required functions to start within the default 30-second timeout.	Increase the OCSConnector timeout in the rimpublic.property file. For more information, visit support.blackberry.com/kb to read article KB28399.

Related information

Removing the BlackBerry Collaboration Service software

Steps to remove the BlackBerry Collaboration Service software

When you remove the BlackBerry Collaboration Service, you perform the following actions:

Step	Action
1	Remove provisioning of the BlackBerry Collaboration Service as a trusted application and trusted application pool.
2	Remove the BlackBerry Collaboration Service software.

Related information

Removing provisioning of the BlackBerry Collaboration Service as a trusted application and trusted application pool

You can use Windows PowerShell to remove the provisioning of the BlackBerry Collaboration Service as a trusted application software and trusted application pool before you remove BlackBerry Collaboration Service instances from your organization's network.

When you remove provisioning of the BlackBerry Collaboration Service as a trusted application, the provisioning record is removed from Microsoft Active Directory. When the provisioning record is removed from Microsoft Active Directory the BlackBerry Collaboration Service service remains running, but the communication to the Microsoft Lync Server or Skype for Business stops.

Remove provisioning of the BlackBerry Collaboration Service as a trusted application and trusted pool

1. Log in to the computer that hosts Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business using an account with RTCUniversalServerAdmins group rights.

2. Open a Lync PowerShell window and complete the following steps:

   a. To display the available SiteIDs in your organization's Microsoft Lync Server or Skype for Business environment, type **Get-CsSite**. Press **Enter**. Record the SiteIds.

   b. To display the available Trusted Application Pools in your organization's Microsoft Lync Server or Skype for Business environment, type **Get-CsTrustedApplicationPool**. Press **Enter**. Record the available Trusted Application Pools.

   c. To list the Computer GRUUs within a specific pool, type **$a** = **Get-CsTrustedApplication -Identity "<*YourPoolFQDN*>/urn:application:rimmsconnector"**. Press **Enter**.

      Where *YourPoolFQDN* is the FQDN of the virtual Application pool of the BlackBerry Collaboration Service instances.

      To view the FQDN and GRUU for each computer, type **$a.ComputerGruus | fl**. Record the Computer GRUU.

      The following is an example of a ComputerGRUU:
      sip:<*BlackBerryCollaborationServiceFQDN*>@<*domain_name*>;gruu;opaque=srvr:rimmsconnector:<*characters*>.

   d. Complete one of the following tasks:

      - To remove one BlackBerry Collaboration Service instance from the trusted application pool when you have more than one BlackBerry Collaboration Service instance in your organization's environment, type **Remove-CsTrustedApplicationComputer -Identity <*BlackBerryCollaborationServiceFQDN*>**. Press **Enter**.

        Repeat this step for each BlackBerry Collaboration Service instance in your organization's network.

      - To remove the trusted application pool when you have only one BlackBerry Collaboration Service in your organization's network, type **Remove-CsTrustedApplicationPool -Identity <*YourPoolFQDN*>**. Press **Enter**.

   e. To publish the change to the Microsoft Lync Server or Skype for Business environment, type **Enable-CsTopology**. Press **Enter**.

   f. To verify that the trusted application pool is removed, type **Get-CsTrustedApplication | ? { $_.LegacyApplicationName -eq "RIMMSConnector" }**.

   g. To verify that the trusted applications are removed, type **Get-CsTrustedApplicationPool**.

Removing the BlackBerry Collaboration Service software

You can use the uninstall application to remove the BlackBerry Collaboration Service software from a computer. The uninstall application can also remove the log files for the existing installation.

Remove the BlackBerry Collaboration Service software

1. On the taskbar, click **Start** > **Control Panel**.

2. Click **Uninstall a program**.

3. Click **BlackBerry Collaboration Service**.

4. Click **Uninstall**.

5. Optionally, select the **You can select this option if you want the setup application to remove the log files for the existing installation** check box.

6. Click **Next**.

7. Click **Finish**.

8. When the uninstall application prompts you to restart the computer to finish removing the BlackBerry Collaboration Service software, click **OK**.

9. Repeat steps 1 to 8 for each BlackBerry Collaboration Service instance.

After you finish: Send an updated device settings file to the BlackBerry 10 devices.

Related information

Components used by the BlackBerry Collaboration Service
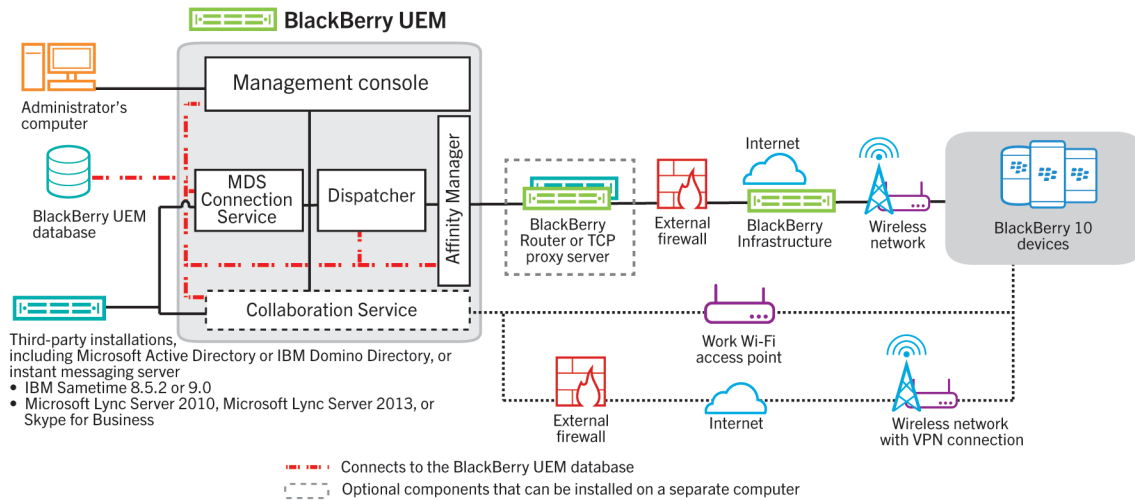
The architecture displays components used by the BlackBerry Collaboration Service in a BlackBerry UEM environment. For more information about the BlackBerry UEM architecture and the individual components, see the Architecture and data flows content.

| Components	Description
BlackBerry Collaboration Service	The BlackBerry Collaboration Service provides a connection between your organization's instant messaging server and the BlackBerry Enterprise IM app on BlackBerry 10 devices running BlackBerry 10 OS version 10.2.1 or later.
BlackBerry UEM database	The BlackBerry UEM database is a relational database that contains user account information and configuration information that the BlackBerry Collaboration Service and the BlackBerry UEM components use.
Management console	The BlackBerry Collaboration Service console is integrated into the BlackBerry UEM management console. You can access it from the menu bar (**Settings** > **Collaboration**). The management console is used to manage the BlackBerry Collaboration Service and the user accounts and devices that are associated with BlackBerry UEM.

Components	Description
BlackBerry MDS Connection Service	The BlackBerry MDS Connection Service provides a secure connection between the BlackBerry 10 devices and the organizations's network. The connection is used when the device is not connected to your work Wi-Fi network. The BlackBerry MDS Connection Service is also responsible for providing enterprise push services for BlackBerry 10 devices.
BlackBerry Affinity Manager	The BlackBerry Affinity Manager maintains an SRP connection with the BlackBerry Infrastructure over the Internet.
BlackBerry Dispatcher	The BlackBerry Dispatcher provides secure connectivity for BlackBerry 10 devices.
BlackBerry Router	By default, BlackBerry UEM makes a direct connection to the BlackBerry Infrastructure over port 3101. The BlackBerry Router acts as a proxy server for connections over the BlackBerry Infrastructure between BlackBerry UEM and all devices.
TCP proxy	If your organization already has a TCP proxy server installed or requires one to meet networking requirements, you can use a TCP proxy server instead of the BlackBerry Router.

Other components

Components	Description
BlackBerry Infrastructure	The BlackBerry Infrastructure validates SRP information and controls the data that travels outside your organization's firewall to and from your organization's devices.
Microsoft Active Directory	If your organization uses Microsoft Active Directory, user account information is obtained from the Microsoft Active Directory. This information is required to create user accounts. If your organization's instant messaging server is Microsoft Lync Server 2010 or 2013, the BlackBerry Collaboration Service validates the user's login information with Microsoft Active Directory.
IBM Domino Directory	If your organization uses IBM Sametime with the IBM Domino Directory, user account information is obtained from the IBM Domino Directory. The BlackBerry Collaboration Service validates the user's login information with the IBM Domino Directory.
Work Wi-Fi or VPN connection	After a BlackBerry 10 device is activated on BlackBerry UEM, communication between the BlackBerry Collaboration Service and the BlackBerry 10 device can occur over your organization's VPN or Wi-Fi network when the BlackBerry 10 device is within a wireless coverage area and enabled for access.
Instant messaging server	Your organization requires one of the following instant messaging servers:

Components	Description
	• IBM Sametime 8.5.2 or 9.0 • Microsoft Lync Server 2010, Microsoft Lync Server 2013, or Skype for Business

Data flow: Sending an instant message from the BlackBerry Enterprise IM app using Microsoft Lync Server or Skype for Business
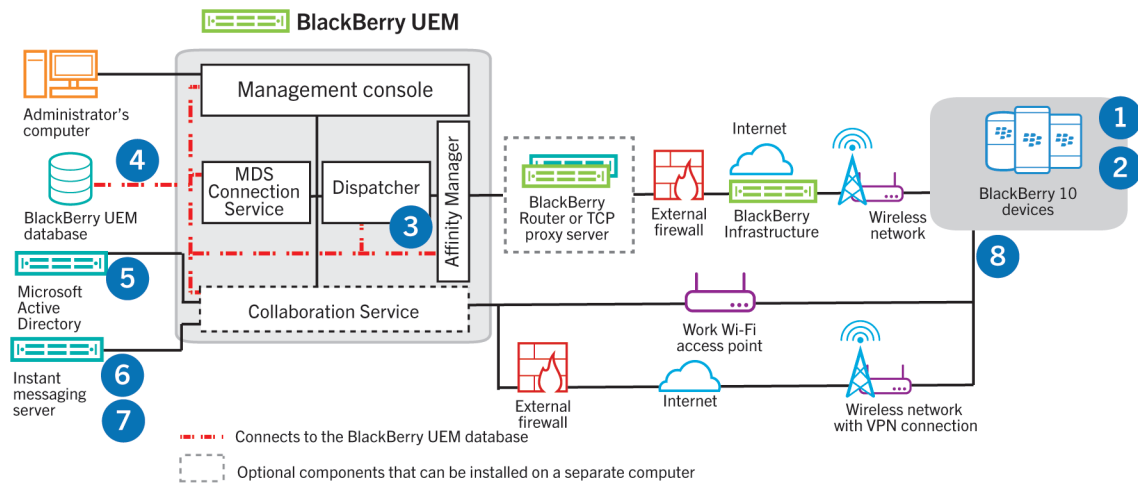
1. A user logs in to the BlackBerry Enterprise IM app on a BlackBerry 10 device that is running BlackBerry 10 OS version 10.2.1 or later in a Microsoft Lync Server environment or BlackBerry 10 OS version 10.3.1 or later in a Skype for Business environment.

2. The BlackBerry 10 device compresses and encrypts the user ID and password.

3. The BlackBerry Enterprise IM app performs one of the following actions:

   • If the BlackBerry 10 device connects using the wireless network, the BlackBerry Enterprise IM app opens an SSL connection and sends the encrypted message through a secure channel from the BlackBerry 10 device through the BlackBerry Infrastructure, BlackBerry Router, BlackBerry Affinity Manager, to the BlackBerry Dispatcher over port 3101, through the BlackBerry MDS Connection Service, and to the BlackBerry Collaboration Service over port 8181.

- • If the BlackBerry 10 device connects using the work Wi-Fi network, the BlackBerry Enterprise IM app opens an SSL connection and sends the encrypted message from the BlackBerry 10 device to the BlackBerry Collaboration Service over port 8181.

4. The BlackBerry Collaboration Service checks the BlackBerry UEM database to find out if the maximum number of available sessions has been reached.

5. The BlackBerry Collaboration Service connects to Microsoft Active Directory to validate the user's login information.

6. The BlackBerry Collaboration Service connects to the instant messaging server and registers an active endpoint for the user using UCMA, over an MTLS connection over port 5061.

7. The instant messaging server sends the registration information back to the BlackBerry Collaboration Service.

8. The BlackBerry Collaboration Service performs one of the following actions:

   - • If the BlackBerry 10 device connects using the wireless network, the BlackBerry Collaboration Service sends the registration response to the BlackBerry 10 device using the SSL connection through the BlackBerry MDS Connection Service, BlackBerry Dispatcher, BlackBerry Affinity Manager, BlackBerry Router, and BlackBerry Infrastructure.

   - • If the BlackBerry 10 device connects using the work Wi-Fi network, the BlackBerry 10 device and the BlackBerry Collaboration Service use a direct connection over port 8181.

The session is created between the BlackBerry 10 device and the BlackBerry Collaboration Service and between the BlackBerry Collaboration Service and Microsoft Lync Server or Skype for Business server. The user can start a conversation, set an availability status, and so on.

Data flow: Sending an instant message from the BlackBerry Enterprise IM app using IBM Sametime
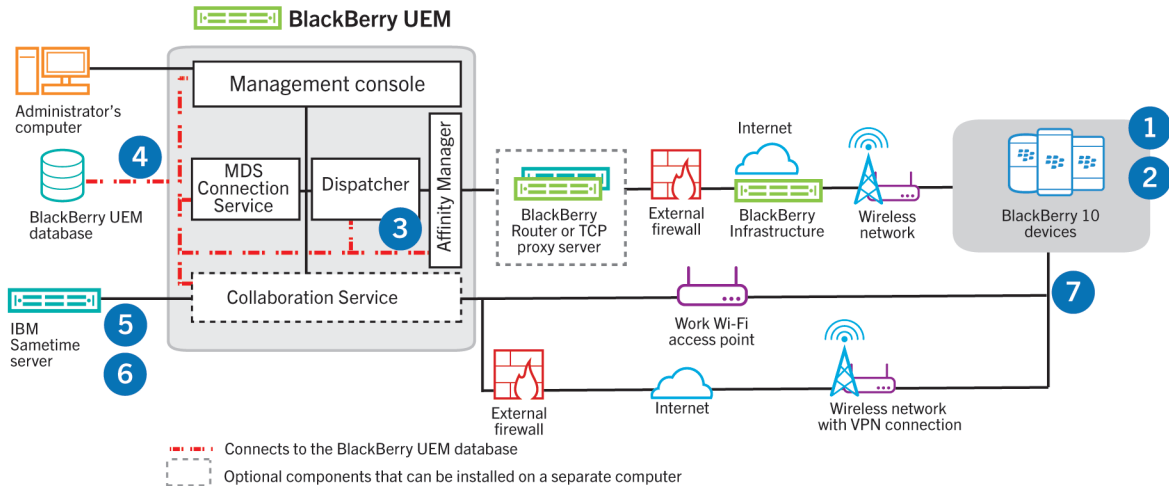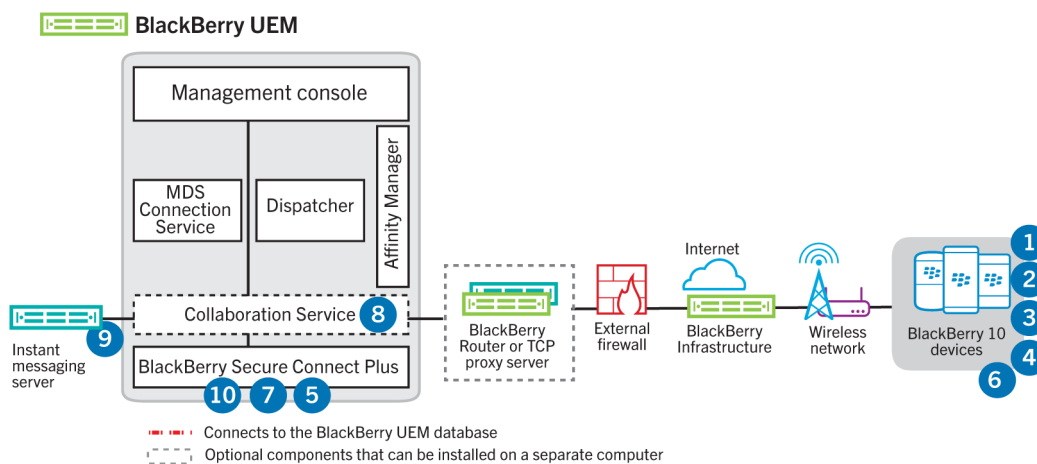
1. A user logs in to the BlackBerry Enterprise IM app on a BlackBerry 10 device that is running BlackBerry 10 OS version 10.2.1 or later.

2. The BlackBerry 10 device compresses and encrypts the user ID and password.

3. The Enterprise IM app performs one of the following actions:

   - If the BlackBerry 10 device connects using the wireless network, the BlackBerry Enterprise IM app opens an SSL connection and sends the encrypted message through a secure channel from the BlackBerry 10 device through the BlackBerry Infrastructure, BlackBerry Router, BlackBerry Affinity Manager, to the BlackBerry Dispatcher over port 3101, through the BlackBerry MDS Connection Service, and to the BlackBerry Collaboration Service over port 8181.

   - If the BlackBerry 10 device connects using the work Wi-Fi network, the BlackBerry Enterprise IM app opens an SSL connection on the BlackBerry 10 device and sends the encrypted message to the BlackBerry Collaboration Service over port 8181.

4. The BlackBerry Collaboration Service checks the BlackBerry UEM database to find out if the maximum number of available sessions has been reached.

5. The BlackBerry Collaboration Service signs the user in to the IBM Sametime server. The BlackBerry Collaboration Service starts an encrypted connection over TCP/IP using the IBM Sametime APIs, reformats the request from the BlackBerry proprietary protocol format into one that the IBM Sametime API supports, and sends the request. By default, the BlackBerry Collaboration Service starts the connection over port 1516 unless you specify a custom port number.

6. The IBM Sametime Server sends the acceptance back to the BlackBerry Collaboration Service.

7. The BlackBerry Collaboration Service performs one of the following actions:

   - If the BlackBerry 10 device connects using the wireless network, the BlackBerry Collaboration Service sends the acceptance response to the BlackBerry 10 device through the BlackBerry MDS Connection Service, BlackBerry Dispatcher, BlackBerry Affinity Manager, BlackBerry Router, and BlackBerry Infrastructure.

   - If the BlackBerry 10 device connects using the work Wi-Fi network, the BlackBerry 10 device and the BlackBerry Collaboration Service use a direct connection over port 8181.

The session is created between the BlackBerry 10 device and the BlackBerry Collaboration Service and between the BlackBerry Collaboration Service and the IBM Sametime Server. The user can start a conversation, set an availability status, and so on.

Data flow: Sending an instant message from the BlackBerry Enterprise IM app when BlackBerry Secure Connect Plus is enabled

BlackBerry Enterprise IM app on BlackBerry 10 devices that have the BlackBerry Secure Connect Plus app installed and configured can connect to your organization's network using a secure IP tunnel through the BlackBerry Infrastructure.

BlackBerry Secure Connect Plus and the BlackBerry 10 device establishes a secure IP tunnel when it is the best available option for connecting to the organization's network. If a BlackBerry 10 device is assigned a Wi-Fi profile and the device can access the work Wi-Fi network, the device uses this method to connect to the network. If the Wi-Fi network option is not available (for example, if the user is off-site and not in range of the work Wi-Fi network), then BlackBerry Secure Connect Plus and the device establish a secure IP tunnel.

1. A user logs in to the BlackBerry Enterprise IM app on a BlackBerry 10 device that is running BlackBerry 10 OS version 10.3.2 or later.

2. The BlackBerry 10 device compresses and encrypts the user ID and password.

3. The BlackBerry UEM and BlackBerry 10 device determine that a secure IP tunnel is the best available method to connect the BlackBerry Enterprise IM app to the organization's network.

4. The BlackBerry 10 device sends a signal through a TLS tunnel, over port 443, to the BlackBerry Infrastructure to request a secure tunnel to the work network. The signal is encrypted by default using FIPS-140 certified Certicom libraries with cipher suites for RSA and ECC keys. The signaling tunnel is encrypted end-to-end.

5. BlackBerry Secure Connect Plus receives the signal over port 3101 from the BlackBerry Infrastructure.

6. The BlackBerry 10 device and BlackBerry Secure Connect Plus negotiate the tunnel parameters and establish a secure tunnel over TURN through the BlackBerry Infrastructure. The tunnel is authenticated and encrypted end-to-end with DTLS.

7. The BlackBerry Enterprise IM app uses the tunnel to connect to the BlackBerry Collaboration Service using standard IPv4 protocols (TCP and UDP).

8. If the BlackBerry 10 device connects using the wireless network, the BlackBerry Enterprise IM app opens an SSL connection and sends the encrypted message through a secure channel from the BlackBerry 10 device through the BlackBerry Infrastructure, BlackBerry Router, through the BlackBerry Secure Connect Plus, and to the BlackBerry Collaboration Service over port 8181

9. BlackBerry Secure Connect Plus transfers the IP data to and from your organization's network. BlackBerry Secure Connect Plus encrypts and decrypts traffic using FIPS-140 certified Certicom libraries.

10. The user can send and receive BlackBerry Enterprise IM messages on the device.

11. As long as the tunnel is open, BlackBerry Enterprise IM app can access network resources. When the tunnel is no longer the best available method to connect to your organization's network, such as the user is in range of the work Wi-Fi network, the BlackBerry Secure Connect Plus terminates the secure connection.

For more information about BlackBerry Secure Connect Plus, see the BlackBerry UEM Administration content.

Data flow: Authenticating the BlackBerry Enterprise IM app with the BlackBerry Collaboration Service when certificate-based authentication is enabled

The BlackBerry Collaboration Service is a trusted application server in the Microsoft Lync Server 2010, Microsoft Lync Server 2013, and Skype for Business topology. The BlackBerry Collaboration Service authenticates the user with Microsoft Active Directory and signs the user in to Microsoft Lync Server or Skype for Business.

This data flow describes how the BlackBerry Enterprise IM app authenticates with the BlackBerry Collaboration Service when certificate-based authentication is enabled.
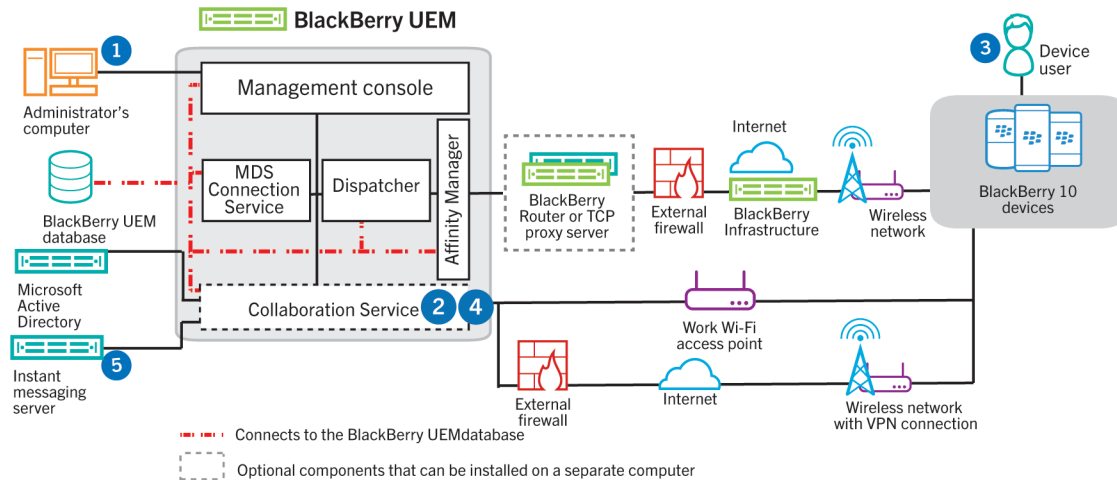
1. You perform the following actions:

   a   Create a single sign-on profile.

   b   If necessary, rank the single sign-on profiles.

   c   Assign the single sign-on profile to user account or user group.

   d   Enable certificate-based authentication for the BlackBerry Collaboration Service.

   e   In Windows services, restart the BlackBerry Collaboration Service instance. If you have multiple instances of BlackBerry Collaboration Service, restart the BlackBerry Collaboration Service on each computer that hosts an instance of the BlackBerry Collaboration Service.

   f   Send an updated device settings file to the BlackBerry 10 devices.

2. The BlackBerry Collaboration Service retrieves the trusted root certificate and the intermediate trusted root certificate from BlackBerry UEM database and reads the maximum number of available sessions.

3. The user performs the following actions:

   a   Opens the BlackBerry Enterprise IM app.

   b   The BlackBerry Enterprise IM establishes a connection with the BlackBerry Collaboration Service.

4. The BlackBerry Collaboration Service performs the following tasks:

   a   Performs the MTLS authentication with the BlackBerry Enterprise IM app.

   b   Extracts the user's email address, associated with the BlackBerry 10 device, from the client certificate.

   c   Performs a SIP address lookup in Microsoft Active Directory using the user's email address.

   d   Store's the user's SIP address in a memory cache for eight hours to reduce Microsoft Active Directory lookups for subsequent logins.

   e   Connects to the Microsoft Lync Server or Skype for Business Server using the user's SIP address to register an active endpoint for the user using UCMA, over an MTLS connection over port 5061.

5. The instant messaging server sends the registration information to the BlackBerry Collaboration Service.

6.   The login process is complete and the user can start a conversation, set an availability status, and so on.

Glossary

<div style="text-align: right">**7**</div>

BES5	BlackBerry Enterprise Server 5
BES10	BlackBerry Enterprise Service 10
DMZ	A demilitarized zone (DMZ) is a neutral subnetwork outside of an organization's firewall. It exists between the trusted LAN of the organization and the untrusted external wireless network and public Internet.
FQDN	fully qualified domain name
GRUU	globally routable user agent URI
HTTPS	Hypertext Transfer Protocol over Secure Sockets Layer
MTLS	Mutual Transport Layer Security
SIP	Session Initiation Protocol
SRP	Server Routing Protocol
SSL	Secure Sockets Layer
TCP	Transmission Control Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol (TCP/IP) is a set of communication protocols that is used to transmit data over networks, such as the Internet.
TLS	Transport Layer Security
UMCA	Microsoft Unified Communications Managed API
UTF-8	8-bit UCS/Unicode Transformation Format

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<div style="float:right">**8**</div>

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