

BlackBerry Web Services for Enterprise Administration

BlackBerry Enterprise Server for Microsoft
Office 365
Version: 1.0



Feature and Technical Overview

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Overview

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The BlackBerry Web Services for Enterprise Administration are a collection of document-style web services that you can use to create applications to manage your organization's BlackBerry Enterprise Server for Microsoft Office 365. You can use the BlackBerry Web Services to automate many of the tasks that administrators typically perform using the BlackBerry Administration Service. For example, you can create an application that automates the process of adding and activating user accounts on the BlackBerry Enterprise Server.

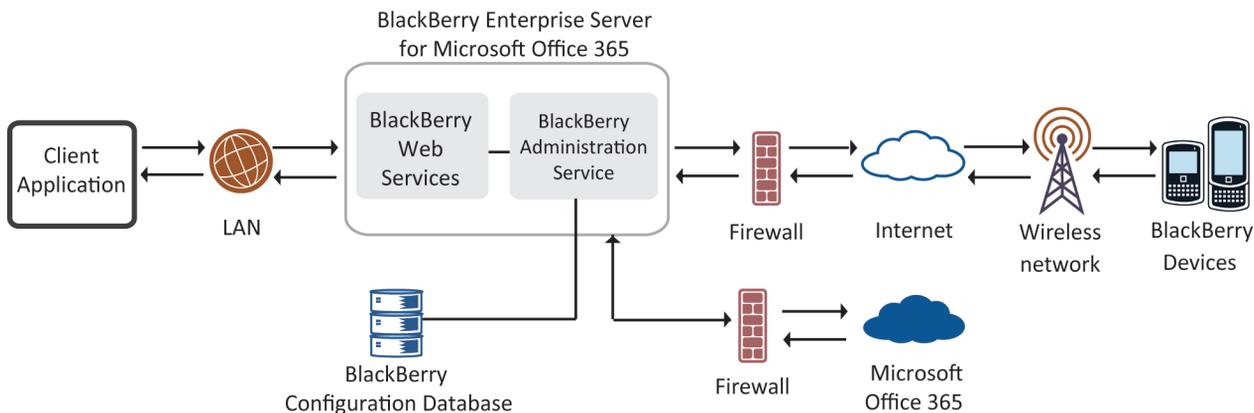
The BlackBerry Web Services are installed automatically when you install the BlackBerry Enterprise Server for Microsoft Office 365, and consist of two interfaces: BWS, which contains a single WSDL for all available methods, and BWSUtil, which is used to configure authentication credentials that applications use to access the BlackBerry Web Services.

The BlackBerry Web Services use abstracted data objects, which allow your applications to be compatible with different versions of the BlackBerry Enterprise Server. The BlackBerry Web Services emphasize compatibility, ease-of-use, and flexibility, giving you the option to build your applications using various development languages and web service frameworks.

To use the BlackBerry Web Services, you should be proficient in one of the supported programming languages and in the use of common web services concepts such as XML, SOAP, and WSDL. You should be familiar with the configuration and administration of the BlackBerry Enterprise Server, including the management of user accounts, groups, IT policies, software configurations, and security settings.

For more information about the BlackBerry Enterprise Server for Microsoft Office 365, visit www.blackberry.com/go/serverdocs to read the product documentation.

Architecture: BlackBerry Web Services



Component	Description
Client application	<p>The custom applications that you can develop and integrate with the BlackBerry Web Services to manage your organization's BlackBerry Enterprise Server for Microsoft Office 365, BlackBerry devices, and user accounts.</p> <p>Your applications use the login credentials of a BlackBerry Administration Service administrator account to authenticate with the BlackBerry Administration Service and BlackBerry Web Services. After an application is authenticated, the BlackBerry Web Services are initialized, and the BWS and BWSUtil web services are ready to receive API calls from the application.</p>
BlackBerry Web Services	<p>A collection of document-style web services that you can use to perform administrative tasks on your organization's BlackBerry Enterprise Server. For example, you can create an application that uses the BlackBerry Web Services to automate the process of adding and activating user accounts on the BlackBerry Enterprise Server for Microsoft Office 365.</p>
BlackBerry Administration Service	<p>The web-based administration console that administrators log into and use to monitor and manage the BlackBerry Enterprise Server for Microsoft Office 365, devices, and user accounts. The BlackBerry Web Services give your applications access to the management capabilities of the BlackBerry Administration Service.</p>
BlackBerry Configuration Database	<p>The database that is created when you install the BlackBerry Enterprise Server for Microsoft Office 365. The BlackBerry Configuration Database stores data about server settings, devices, and user accounts. The BlackBerry</p>

Component	Description
	Administration Service accesses the BlackBerry Configuration Database to use and make changes to this data.

Key terms for BlackBerry Web Services developers

The table below lists and explains key terms that you may encounter as you become more familiar with the BlackBerry Web Services.

The following descriptions provide basic knowledge to help build your understanding of a BlackBerry Enterprise Server domain. For more detailed information, consult with your organization's BlackBerry Enterprise Server administrators, or visit www.blackberry.com/go/serverdocs to read the administrator documentation for the BlackBerry Enterprise Server for Microsoft Office 365.

Term	Description
Access control	<p>Administrators can configure access control rules to specify the web servers that users are permitted to access from their devices and the applications and services that are permitted to push data to devices. Administrators define access controls by configuring pull rules and push rules.</p> <p>Administrators configure access control rules using the BlackBerry Administration Service.</p>
Administrator account	<p>Administrator accounts are used to log in to the BlackBerry Administration Service and manage the BlackBerry Enterprise Server. Each administrator account is assigned a role that determines what actions the administrator can perform.</p> <p>The BlackBerry Enterprise Server is installed using a service account (for example, BESAdmin). An administrator user can then log in to the BlackBerry Administration Service using the service account and create one or more administrator accounts for other users. If an administrator account has a role with the appropriate permissions, that administrator can create other administrator accounts.</p>
Application control policy	<p>Administrators use application control policies to control the data and APIs that applications can access on devices and the external data sources and network connections that applications can access. When an administrator adds an</p>

Term	Description
	<p>application to a software configuration, the administrator must assign an application control policy to the application.</p> <p>The BlackBerry Administration Service includes a standard application control policy for applications that are classified as required, optional, or not permitted. Administrators can change the default settings of the standard application control policies, or create custom application control policies.</p>
BlackBerry Administration Service	<p>The BlackBerry Administration Service is the web-based administration console for the BlackBerry Enterprise Server. Administrators log in to the BlackBerry Administration Service to manage server components, user accounts, and devices in the BlackBerry Enterprise Server domain.</p> <p>The BlackBerry Web Services provide custom applications with access to many of the management capabilities of the BlackBerry Administration Service.</p>
BlackBerry Attachment Service	<p>The BlackBerry Attachment Service is the component of the BlackBerry Enterprise Server that converts supported message attachments into a format that users can view on their devices.</p>
BlackBerry Configuration Database	<p>The BlackBerry Configuration Database is a relational database that is installed with the BlackBerry Enterprise Server. The BlackBerry Configuration Database contains user account information and configuration information that the BlackBerry Enterprise Server components use.</p>
BlackBerry Controller	<p>The BlackBerry Controller is the component of the BlackBerry Enterprise Server that monitors all server components and restarts them if they stop responding.</p>
BlackBerry Collaboration Service	<p>The BlackBerry Collaboration Service is the component of the BlackBerry Enterprise Server that provides a connection between an organization's instant messaging server and the collaboration client on devices.</p>
BlackBerry device-enabled	<p>A user account or administrator account is BlackBerry device-enabled if the account is allowed to be associated with a device. Generally, user accounts are BlackBerry device-enabled, and administrator accounts may or may not be device-enabled, depending on whether administrators require devices.</p> <p>Administrators can configure whether accounts are device-enabled using the BlackBerry Administration Service.</p>
BlackBerry Dispatcher	<p>The BlackBerry Dispatcher is the component of the BlackBerry Enterprise Server that maintains an SRP connection with the BlackBerry Infrastructure over the Internet. The BlackBerry Dispatcher is responsible for compressing and encrypting and for decrypting and decompressing data that travels over the Internet to and from the devices.</p>

Term	Description
BlackBerry Infrastructure	The BlackBerry Infrastructure validates SRP information and controls the IPPP traffic that travels outside an organization's firewall to and from devices.
BlackBerry Policy Service	The BlackBerry Policy Service is the component of the BlackBerry Enterprise Server that performs administration services over the wireless network. The BlackBerry Policy Service sends IT policies and IT administration commands to devices to configure user permissions and security settings, and also sends the service book to devices to configure device settings and services.
BlackBerry MDS Connection Service	The BlackBerry MDS Connection Service is the component of the BlackBerry Enterprise Server that permits users to access web content, the Internet, or an organization's intranet. It also permits applications on devices to connect to the organization's application servers or content servers for application data and updates.
BlackBerry Messaging Agent	The BlackBerry Messaging Agent is the component of the BlackBerry Enterprise Server that connects to the Server Connector for Microsoft Office 365 to access messaging services, calendar management, address lookups, attachment viewing, attachment downloading, and encryption key generation. The BlackBerry Messaging Agent synchronizes configuration data between the BlackBerry Configuration Database and the Messaging State Database.
BlackBerry Router	The BlackBerry Router is the component of the BlackBerry Enterprise Server that connects to the wireless network to send data to and from devices.
BlackBerry Synchronization Service	The BlackBerry Synchronization Service is the component of the BlackBerry Enterprise Server that synchronizes organizer data between devices and Microsoft Office 365 over the wireless network.
BlackBerry Web Desktop Manager	The BlackBerry Web Desktop Manager is a web-based application that allows device users to activate their devices and perform limited management tasks.
Enterprise Service Policy	Administrators can use the Enterprise Service Policy to control which devices in an organization's environment can connect to the BlackBerry Enterprise Server. Administrators can turn on and configure the Enterprise Service Policy using the BlackBerry Administration Service.
Group	<p data-bbox="515 1333 1305 1425">Administrators use groups to apply a common set of configuration settings (software configurations, IT policies, roles, and so on) to multiple users that are designated as group members.</p> <p data-bbox="515 1446 1305 1564">Administrators can create groups and assign users to groups using the BlackBerry Administration Service. Administrators can assign users to more than one group. The BlackBerry Administration Service resolves any conflicting group settings. Administrators can also assign groups to other groups.</p>

Term	Description
Indirect group	A group that is assigned to a user indirectly. For example, an administrator adds a user to a group, and then adds the group to another parent group. The parent group is assigned to the user as an indirect group. The BlackBerry Administration Service resolves any conflicting settings.
Indirect IT policy	An IT policy that is assigned to a user indirectly. For example, an administrator adds a user to a group, and then adds the group to another parent group. The IT policy of the parent group is assigned to the user as an indirect IT policy. The BlackBerry Administration Service resolves any conflicting rule settings.
Indirect role	A role that is assigned to a user indirectly. For example, an administrator adds a user to a group, and then adds the group to another parent group. The role of the parent group is assigned to the user as an indirect role. The BlackBerry Administration Service resolves any conflicting settings.
Indirect software configuration	A software configuration that is assigned to a user indirectly. For example, an administrator adds a user to a group, and then adds the group to another parent group. The software configuration of the parent group is assigned to the user as an indirect software configuration. The BlackBerry Administration Service resolves any conflicting settings.
Indirect VPN profile	A VPN profile that is assigned to a user indirectly. For example, an administrator adds a user to a group, and then adds the group to another parent group. The VPN profile of the parent group is assigned to the user as an indirect VPN profile. The BlackBerry Administration Service resolves any conflicting settings.
Indirect Wi-Fi profile	A Wi-Fi profile that is assigned to a user indirectly. For example, an administrator adds a user to a group, and then adds the group to another parent group. The Wi-Fi profile of the parent group is assigned to the user as an indirect Wi-Fi profile. The BlackBerry Administration Service resolves any conflicting settings.
IT policy	<p data-bbox="515 1166 1315 1281">Administrators use IT policies to configure user permissions and security settings for each user's device. An IT policy is a collection of IT policy rules that are configured individually. Each IT policy rule controls a specific device feature or setting.</p> <p data-bbox="515 1305 1315 1420">Administrators can create IT policies and assign IT policies to users or groups using the BlackBerry Administration Service. If a user is assigned multiple IT policies, the BlackBerry Administration Service resolves any conflicting rule settings.</p> <p data-bbox="515 1444 1315 1564">If an administrator does not specify a custom IT policy for a user or group, the preconfigured Default IT policy is assigned. Administrators can create and assign custom IT policies at any time, or they can change the configuration of the Default IT policy.</p>

Term	Description
Job	<p>The BlackBerry Administration Service creates jobs to deliver applications, profiles, and IT policies to devices. A job is created whenever an administrator assigns a software configuration, IT policy, or profile to users or groups, or changes a software configuration, IT policy, or profile that was previously assigned.</p> <p>A job consists of multiple tasks. Each task delivers a specific object or setting (for example, an IT policy) to a device.</p> <p>Administrators can change the default settings that control how the BlackBerry Administration Service creates jobs and delivers tasks to devices.</p>
Messaging State Database	<p>The Messaging State Database is a relational database that is installed with the BlackBerry Enterprise Server. The Messaging State Database contains the state of the data that is synchronized to devices. It is connected to the BlackBerry Messaging Agent, the BlackBerry Synchronization Service, and the Server Connector for Microsoft Office 365.</p>
Reconciled applications	<p>Reconciled applications is the term used to refer to the applications that are installed on a device after the BlackBerry Administration Service resolves any conflicting settings in one or more software configurations that are assigned to a user.</p>
Role	<p>Administrators assign roles to administrator accounts to determine what actions the administrator can perform when they log in to the BlackBerry Administration Service. Each role consists of a set of permissions (also referred to as capabilities) that define what the administrator can or cannot do (for example, create users, create groups, and so on). The BlackBerry Administration Service includes various preconfigured roles that are designed for different types of administrators.</p> <p>Administrators can create and assign roles to administrator users or groups using the BlackBerry Administration Service.</p>
Service book	<p>The service book consists of various service records that configure device settings and features, and determine which services are available on the devices. The BlackBerry Enterprise Server sends the service book to devices when the devices are activated.</p>
Software configuration	<p>Administrators use software configurations to install, upgrade, remove, and manage applications on devices.</p> <p>Administrators create and assign software configurations to users or groups using the BlackBerry Administration Service. Administrators can assign more</p>

Term	Description
User account	<p>than one software configuration to a user or group. The BlackBerry Administration Service resolves any conflicting settings.</p> <p>User accounts represent device users in an organization. Administrators add user accounts to the BlackBerry Enterprise Server using data from the organization's user directory.</p> <p>Administrators create and manage user accounts, and associate user accounts with devices, using the BlackBerry Administration Service.</p>
VPN profile	<p>Administrators use VPN profiles to specify how device users connect to an organization's VPN.</p> <p>Administrators can create and assign VPN profiles to users or groups using the BlackBerry Administration Service.</p>
Wi-Fi profile	<p>Administrators use Wi-Fi profiles to specify how device users connect to an organization's Wi-Fi network.</p> <p>Administrators can create and assign Wi-Fi profiles to users or groups using the BlackBerry Administration Service.</p>
Wipe	<p>Wipe is the term used to describe the action of permanently deleting the data on a user's device.</p> <p>Administrators can use the BlackBerry Administration Service to permanently delete the data on a user's device.</p>

Features of the BlackBerry Web Services

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Feature	Description
Programmatic access to the BlackBerry Administration Service	You can develop applications that automate and combine various administrative tasks for the BlackBerry Enterprise Server for Microsoft Office 365.
Installed automatically	The BlackBerry Web Services are installed automatically when you install the BlackBerry Administration Service.
Ability to assign BlackBerry device users to multiple groups	You can share administrative roles, IT policies, and other configuration settings among similar user accounts so that properties can be set once and used for each user.
Backward and forward compatibility	The BlackBerry Web Services use abstracted data objects, which allow for a greater level of backward and forward compatibility with new or existing applications.
Platform independent	The BlackBerry Web Services are independent of any operating system or programming platform, which means that they are compatible with any of the messaging servers that the BlackBerry Enterprise Server for Microsoft Office 365 supports.
Security features	The BlackBerry Web Services communicate with the BlackBerry Administration Service using the HTTPS protocol.
Events logging	The BlackBerry Web Services write data to the BlackBerry Administration Service Application Server (BBAS-AS) log file.

Programmatic access to the BlackBerry Administration Service

You can use the BlackBerry Web Services to develop applications that enhance your ability to manage the BlackBerry Enterprise Server for Microsoft Office 365, BlackBerry devices, and user accounts. You can develop applications that

automate and combine several tasks that administrators would typically perform using the BlackBerry Administration Service.

The BlackBerry Web Services use SOAP to communicate with authenticated applications. SOAP is platform-independent, which can make it easier to integrate your new applications with existing applications.

To access and use the available APIs, an application must first authenticate with the BlackBerry Web Services. The application uses the login credentials of one or more BlackBerry Administration Service administrator accounts to authenticate with and initialize the BlackBerry Web Services. When authentication completes, the BlackBerry Web Services are ready to accept API calls. The roles and permissions that are associated with the administrator account determine what APIs the application can use, and what management tasks the application can perform. For example, if you create an application to add user accounts to the BlackBerry Enterprise Server, the administrator account that the application uses must have a role with the Create a user permission.

An application that uses the BlackBerry Web Services must be able to make calls and receive responses from the BlackBerry Administration Service. Any computer with authenticated access to the computer that hosts the BlackBerry Administration Service can access the BlackBerry Web Services. This supports a secure, scalable model for programmatic access and flexibility.

Backward and forward compatibility using abstracted data objects

The BlackBerry Web Services use abstracted data objects. Abstracted data objects make application development easier because they separate the implementation of data elements from the interface. Applications that use the abstracted data objects of the BlackBerry Web Services have the added benefit of not requiring any changes when you install a new version of the BlackBerry Enterprise Server for Microsoft Office 365.

Platform independence

The BlackBerry Web Services are platform-independent, so you can integrate new applications that use the BlackBerry Web Services with existing applications and experience fewer compatibility issues. The BlackBerry Web Services are fully scalable, so it is easier to integrate your applications with different versions of the BlackBerry Enterprise Server for Microsoft Office 365 and troubleshoot compatibility issues, regardless of the messaging server.

Security features

The BlackBerry Web Services use HTTPS to communicate with the BlackBerry Administration Service. Using HTTPS provides encrypted communication, which helps protect your organization's environment from passive and active network attacks while you perform administrative tasks.

Event logging

The BlackBerry Web Services write messages about API activity to the BlackBerry Administration Service Application Server (BBAS-AS) log file. By default, the BBAS-AS log file is located at `<drive>:\Program Files (x86)\Research In Motion\BlackBerry Enterprise Server for Microsoft Office 365\Logs\<date>\`.

You can review log messages for diagnostic and debugging purposes. The BlackBerry Administration Service log files are important because the BlackBerry Web Services rely on the BlackBerry Administration Service to perform administrative tasks.

Related resources

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To view the API reference for the latest version of the BlackBerry Web Services, and to read the BlackBerry Web Services documentation, visit <http://docs.blackberry.com/BWS>.

To read the documentation for the BlackBerry Enterprise Server, visit blackberry.com/go/serverdocs.

Resource	Information
<i>BlackBerry Web Services for Enterprise Administration - API Reference</i>	<ul style="list-style-type: none"> • Details for all available web services • Code samples
<i>BlackBerry Web Services for Enterprise Administration - Getting Started Guide for Java developers</i>	<ul style="list-style-type: none"> • System requirements • Instructions for configuring the BlackBerry Enterprise Server for Microsoft Office 365 and your development environment • Instructions for generating proxy files • Sample application
<i>BlackBerry Web Services for Enterprise Administration - Getting Started Guide for Microsoft .NET developers</i>	<ul style="list-style-type: none"> • System requirements • Instructions for configuring the BlackBerry Enterprise Server for Microsoft Office 365 and your development environment • Instructions for generating proxy files • Sample application
<i>BlackBerry Web Services for Enterprise Administration - Release Notes</i>	<ul style="list-style-type: none"> • Description of new and changed APIs and classes • Fixed issues • Known issues
<i>BlackBerry Enterprise Server for Microsoft Office 365 Feature and Technical Overview</i>	<ul style="list-style-type: none"> • BlackBerry Enterprise Server for Microsoft Office 365 features • System architecture • Data and process flows

Resource	Information
<i>BlackBerry Enterprise Server for Microsoft Office 365 Installation and Configuration Guide</i>	<ul style="list-style-type: none">• System requirements• Installation instructions
<i>BlackBerry Enterprise Server for Microsoft Office 365 Administration Guide</i>	<ul style="list-style-type: none">• System configuration and management

Glossary

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API	application programming interface
HTTPS	Hypertext Transfer Protocol over Secure Sockets Layer
IT policy	An IT policy consists of various IT policy rules that control the security features and behavior of BlackBerry smartphones, BlackBerry PlayBook tablets, the BlackBerry Desktop Software, and the BlackBerry Web Desktop Manager.
MDM domain	<p>An MDM domain consists of a BlackBerry database and any BlackBerry services or components that are associated with it. An MDM domain can refer to any of the following environments:</p> <ul style="list-style-type: none">• BlackBerry Enterprise Server domain: A BlackBerry Configuration Database and any BlackBerry Enterprise Server components that are associated with it• BlackBerry Enterprise Server Express domain: A BlackBerry Configuration Database and any BlackBerry Enterprise Server Express components that are associated with it• BlackBerry Device Service domain: A BlackBerry Configuration Database and any BlackBerry Device Service components that are associated with it• Universal Device Service domain: A Management Database and any Universal Device Service components that are associated with it
SOAP	Simple Object Access Protocol
SSL	Secure Sockets Layer
WSDL	Web Services Description Language
XML	Extensible Markup Language

Legal notice

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