

Planning Guide

BlackBerry Enterprise Service 12

Version 12.0



Contents

About this guide.....	4
What is BES12?.....	5
Key features of BES12.....	5
Comparing BES12 with previous EMM solutions from BlackBerry.....	6
Steps to plan your BES12 environment.....	7
Identifying your organization's needs.....	8
BES12 requirements.....	16
Hardware requirements.....	16
Designing a deployment plan.....	20
BES12 installation and upgrade.....	20
Upgrading from BES5 to BES12.....	21
Upgrading from BES5 to BES12 in an existing domain.....	21
Upgrading from BES5 to BES12 in a new domain.....	22
Upgrading from BES10 to BES12.....	24
Decisions.....	24
Installing BES12 on the same computer as BES10.....	24
Installing BES12 on a separate computer from BES10.....	25
Migrating BES10 data to BES12.....	25
Upgrading from BES5 and BES10 to BES12.....	26
Load-balancing data for BlackBerry 10 devices.....	26
Supporting the deployment.....	28
Mitigating issues during deployment.....	28
Returning to a previous environment.....	30
Glossary.....	31
Product documentation.....	32
Provide feedback.....	35
Legal notice.....	36

About this guide

1

This guide contains information about what you should consider before buying, designing, and installing BES12, such as hardware and software requirements, and how to assess, design, and maintain your organization's environment. This guide is intended for decision-makers, administrators, internal and third-party support representatives, trainers, and sales representatives. Read this guide after you read the *BlackBerry Enterprise Service 12 Product Overview* and before you read the *BlackBerry Enterprise Service 12 Installation Guide*.

What is BES12?

2

BES12 is an EMM solution from BlackBerry. EMM solutions help you do the following:

- Manage mobile devices for your organization to protect business information
- Keep mobile workers connected with the information that they need
- Provide administrators with efficient business tools

With BES12, you can manage the following device types:

- BlackBerry 10
- BlackBerry OS (version 5.0 to 7.1)
- iOS
- Android
- Windows Phone

You can manage these devices from a single, simplified UI with industry-leading security.

Key features of BES12

Feature	Description
Management of many types of devices	You can manage BlackBerry 10, BlackBerry OS (version 5.0 to 7.1), iOS, Android, and Windows Phone devices.
Single, unified UI	You can view all devices in one place and access all management tasks in a single, web-based UI. You can share administrative duties with multiple administrators who can access the management console at the same time.
Trusted and secure experience	Device controls give you precise management of how devices connect to your network, what capabilities are enabled, and what apps are available. Whether the devices are owned by your organization or your users, you can protect your organization's information.
Balance of work and personal needs	BlackBerry Balance and Secure Work Space technologies are designed to make sure that personal information and work information are kept separate and secure on devices. If the device is lost or the employee leaves the organization, you can delete only work-related information or all information from the device.

Comparing BES12 with previous EMM solutions from BlackBerry

EMM solution	Supported device types	Description
BES12	<ul style="list-style-type: none"> BlackBerry 10 BlackBerry OS (version 5.0 to 7.1) iOS Android Windows Phone 	<p>You can manage the server, user accounts, and all device types with a single UI, the management console. The software architecture has been simplified for easier management, increased scalability, and additional multiplatform features.</p> <p>For high availability, you can install additional active servers that share the management load automatically.</p>
BlackBerry Enterprise Service 10	<ul style="list-style-type: none"> BlackBerry 10 BlackBerry OS (version 5.0 to 7.1) BlackBerry PlayBook iOS Android 	<p>You can manage the server, devices, and user accounts with dedicated, advanced UIs for different device types. You can also use BlackBerry Management Studio as a single, unified UI for basic administration of all devices.</p> <p>To manage BlackBerry OS (version 5.0 to 7.1) devices, you can install BlackBerry Enterprise Service 10 on the same computer as BlackBerry Enterprise Server 5.0 SP4 and use BlackBerry Management Studio for basic administration.</p> <p>For high availability, you can install standby instances of the server.</p>
BlackBerry Enterprise Server 5	<ul style="list-style-type: none"> BlackBerry OS (version 5.0 to 7.1) 	<p>You can manage the server, devices, and user accounts with the BlackBerry Administration Service. For high availability, you can install standby instances of most server components.</p>

Steps to plan your BES12 environment

3

When you deploy BES12 in your environment, you perform the following actions:

1 Identify your organization's needs

2 Design a deployment plan

3 Support the deployment

Identifying your organization's needs

4

Part of planning for BES12 is to document your organization's current environment and consider what you want BES12 to provide for your organization. Using this information, you can figure out what your organization must do to get from your current environment to an implementation of BES12 that meets your needs.

Documents that are useful when you document your organization's needs are the *BlackBerry Enterprise Service 12 Compatibility Matrix* and the *BlackBerry Enterprise Service 12 Performance Calculator*. You can find these documents at docs.blackberry.com/BES12.

EMM solution

Your organization's current environment	Considerations for BES12	What you need
Do you currently have another EMM solution from BlackBerry (BES5 or BES10), an EMM solution from another vendor, or no previous EMM solution?	<p>Knowing which EMM solution you have already helps you identify whether you should plan for an installation or upgrade:</p> <ul style="list-style-type: none"> If your organization's network already has a BES5 or a BES10 instance, you can upgrade to BES12. If you have no previous EMM solution from BlackBerry, you can install a new instance of BES12. 	<p>After you know the type of BES12 deployment you need, you can determine the requirements to implement it.</p> <p>If you are upgrading from BES5, the software must be at BES5 version 5.0.4 MR10 or later.</p> <p>If you are upgrading from BES10, the software must be at BES10 version 10.2.3 or later.</p>

Users

Your organization's current environment	Considerations for BES12	What you need
<p>You should gather the following information about your organization's users:</p> <ul style="list-style-type: none"> How many users How technically savvy they are Whether any users have more than one device 	<p>Use the <i>BlackBerry Enterprise Service 12 Performance Calculator</i> to determine how many instances of BES12 are required to handle the number of users in your organization.</p>	<p>Knowing the level of technical expertise of your users helps you tailor the activation email they receive, if they activate their own devices using BES12 Self-Service.</p> <p>You may need to obtain more computers to handle a large number of users.</p>

Devices

Your organization's current environment	Considerations for BES12	What you need
<p>Determine which types of devices the current EMM solution in your organization manages:</p> <ul style="list-style-type: none"> • Number and types of devices (BlackBerry 10 OS, BlackBerry OS, iOS, Android, and Windows Phone) • The software and hardware versions of the devices 	<p>Knowing this information, and using the <i>BlackBerry Enterprise Service 12 Compatibility Matrix</i> and the <i>BlackBerry Enterprise Service 12 Performance Calculator</i>, determine which configuration of BES12 instances you require to support the various device types. It also helps you determine whether any users must upgrade their hardware or software so that their devices work with BES12.</p>	<p>Your users may need to upgrade or change their device hardware, or upgrade their device software.</p> <p>iOS and Android devices must have the latest version of the BES12 Client before they can function on BES12.</p> <p>You may need to obtain more computers to handle the number and types of devices.</p>

Device control

Your organization's current environment	Considerations for BES12	What you need
<p>Find out about the level of control your organization currently has over your users' devices.</p>	<p>When you know the level of control your organization currently has over users' devices, you can decide whether you want to maintain that level, change it, or implement it differently. For example, do you want:</p> <ul style="list-style-type: none"> • Separate personal and work spaces • The ability to wipe the devices remotely • To implement a bring-your-own-device (BYOD) policy <p>This helps you determine whether you need Secure Work Space for iOS and Android devices and BlackBerry Balance for BlackBerry 10 devices.</p>	<p>You may need to obtain new licenses or new types of licenses.</p>

Security

Your organization's current environment	Considerations for BES12	What you need
How is security for devices and EMM implemented in your organization's environment?	Beyond device security, you should determine the level of security that your organization requires for your installation of BES12.	If your organization's business is regulated, you may require a DMZ, firewall, TCP proxy server, or the BlackBerry Router. You may require more computers to install these components.

Licenses

Your organization's current environment	Considerations for BES12	What you need
Gather information about your organization's existing BlackBerry licenses, such as the types and number of licenses.	<p>Determine the types of licenses your organization needs for BES12. Consider the types of devices supported by your organization and the level of control you want over devices.</p> <p>Determine how many licenses you require. Every activated device uses a single license.</p> <p>Determine whether you want to buy licenses from BlackBerry (or a BlackBerry partner) or from your service provider as part of your current service agreement.</p>	Obtain BES12 licenses. Depending on your current licenses, your level of technical support, and current licensing promotions, you may be able to claim some licenses for BES12.

Databases

Your organization's current environment	Considerations for BES12	What you need
If you have an EMM solution from BlackBerry, make sure that you know the names and locations of the databases. (For example, the default name for the BES10 BlackBerry Configuration Database is BDSMgmt).	BES12 handles roles differently than BES5. BES12 allows only one role for each user, and BES5 allows multiple roles for each user. BES12 requires an entire role to be assigned to one, some, or all groups. BES5 allows each privilege within a role to be assigned to one, some, or all groups.	If you are upgrading from BES5 to BES12, you must review the BES5 roles to remove any conflicting privileges, otherwise the BES12 setup application stops when it tries to resolve the roles. For more information, see the <i>BlackBerry Enterprise Service 12 Installation Guide</i> .

Your organization's current environment	Considerations for BES12	What you need
	<p>To migrate BES10 users, devices, IT policies, profiles, and groups to BES12, the indexes of the BES10 BlackBerry Configuration Database and the BES10 Management Database must be defragmented before you begin migration.</p>	<p>If you are upgrading from BES10 to BES12, perform defragmentation tasks on the BES10 BlackBerry Configuration Database, the BES10 Management Database, and the BES12 database (if one exists) before you start the migration process. If you are migrating a large number of users, you should defragment the BES12 database after you migrate each group of users.</p>

High availability

Your organization's current environment	Considerations for BES12	What you need
<p>Is your organization's current EMM solution set up for high availability?</p>	<p>To determine if your organization requires multiple BES12 instances to support high availability, think about whether:</p> <ul style="list-style-type: none"> • Users can tolerate some interruptions in service, or if they require minimal service interruptions while you resolve server issues or perform upgrades • Your organization wants to load-balance user and device data across multiple BES12 instances • Your organization wants to retain database service and data integrity if issues occur with the BES12 database 	<p>Install more than one BES12 instance to create a high availability configuration, and configure database high availability using Microsoft SQL Server features.</p>

Hardware

Your organization's current environment	Considerations for BES12	What you need
<p>What hardware do you already have? For example:</p> <ul style="list-style-type: none"> The number of computers The specifications of these computers (processors, RAM, hard disk) Any application servers 	<p>Using the information in this document, the <i>BlackBerry Enterprise Service 12 Compatibility Matrix</i>, and the <i>BlackBerry Enterprise Service 12 Performance Calculator</i>, you can determine whether your organization has:</p>	<p>If your existing computers do not meet your organization's needs for BES12, you may need to add or upgrade computers.</p>
<p>Do you use monitoring tools?</p>	<ul style="list-style-type: none"> Enough disk space to install BES12 Hardware that can provide the level of performance your organization needs Hardware limitations, to identify whether you are limited to a single-server installation or if a multiple server installation is possible Whether you can use some or all of your existing hardware for BES12 	<p>For more details on SNMP monitoring with BES12, visit docs.blackberry.com/BES12 to read the <i>BlackBerry Enterprise Service 12 Configuration Guide</i>.</p>
	<p>There are many tools that you can use for monitoring various aspects of BES12:</p> <ul style="list-style-type: none"> Windows Event Viewer System logging (Syslog) BES12 performance counters BES12 Resource Kit Capacity calculator BES12 Dashboard 	
	<p>You can also use third-party SNMP tools to monitor the activity of the BES12 Core.</p>	

Network

Your organization's current environment	Considerations for BES12	What you need
<p>Identify known network issues such as latency and determine the overall network performance.</p> <p>Document the top-level architecture of the network, for example:</p> <ul style="list-style-type: none"> • Does it have multiple domains? • How many instances of an EMM solution from BlackBerry and where are those servers located? • Does your network use a proxy server? 	<p>Do you need to increase the network's overall performance?</p> <p>Do you need to consolidate domains?</p> <p>If your network has servers from a single domain in multiple regions, it is possible that a user from one region might get moved to a server in another region during an upgrade to BES12. Performance issues may result, for example, if a user in the United States is on a BES12 instance in the United Kingdom.</p> <p>If your organization requires a proxy server, install a BlackBerry Router in the BES12 domain, or use a TCP proxy server that is already installed in your environment.</p>	<p>To manage BlackBerry OS (version 5.0 to 7.1) devices from BES12, you must observe the same MAPI latency restrictions with your BES12 as you do with your BES5.</p> <p>Consolidate domains before installing BES12, because it is not possible to move users from one BES12 domain to another in this release of BES12.</p> <p>You can make sure that users stay in a specific region by creating a dedicated BES12 domain for each region.</p> <p>If you decide to install a proxy server or a BlackBerry Router in a DMZ, you must set up both an internal and an external firewall.</p>

Support

Your organization's current environment	Considerations for BES12	What you need
<p>Consider your current support structure and needs. For example:</p> <ul style="list-style-type: none"> • Does your organization have an in-house support team and an in-house development team for writing and porting apps? • Are most users mobile workers who rely on their devices to do much of their work (critical resources) or are the devices more of a "perk" of the business? • Do users activate their own devices? 	<p>Do you need to change your support organization at all to accommodate BES12?</p>	<p>Document new tasks for the support organization.</p> <p>Training for the support organization.</p>

Apps

Your organization's current environment	Considerations for BES12	What you need
<p>Take stock of the apps currently used in your organization. Depending on the answers, the types of apps can have implications for several areas, including software development, security, and network capacity. Some considerations are:</p> <ul style="list-style-type: none"> • Custom apps that might need to be ported to other device types • Required or optional apps • Secured apps • Plans for apps to add to your EMM environment 	<p>Find out which apps your users consider important.</p> <p>App assignments cannot be moved from BES10 to BES12.</p>	<p>Plan for software development to:</p> <ul style="list-style-type: none"> • Port custom apps to other device types • Secure apps • Develop new custom apps <p>Make sure that any required apps are added to BES12 before moving users and devices.</p>

Extra software

Your organization's current environment	Considerations for BES12	What you need
<p>Does your organization use instant messaging?</p> <p>Beyond basic EMM features, your organization may require other software, such as:</p> <ul style="list-style-type: none"> • A dedicated enterprise instant messaging solution • Special VPN requirements or network requirements • Productivity tools that work with devices that can be deployed to the users' desktops or laptops 	<p>The initial release of BES12 does not support enterprise instant messaging. Users you move from BES10, can no longer access enterprise instant messaging.</p>	<p>Communication to your current enterprise instant messaging users that they do not have enterprise instant messaging during the initial release of BES12.</p>

Budget

Your organization's current environment	Considerations for BES12	What you need
<p>What is the budget for your current EMM solution and devices?</p>	<p>Your organization's budget for the BES12 installation has an impact on several areas, including:</p> <ul style="list-style-type: none"> • Determining how much BYOD to allow • Whether you need to start with a scaled-back solution, with plans for growth, or if you can afford to accommodate all your requirements right away • How you can use policies, profiles, and groups to help reduce roaming charges and data costs • Which types of licenses to buy 	<p>Plan for phased implementation.</p> <p>Plan IT policies, profiles, and groups.</p> <p>Buy appropriate licenses.</p>

BES12 requirements

Hardware requirements

To determine the CPU and disk space requirements for BES12, you must consider the number of devices that you plan to activate, the type of connection that devices use, and the level and type of user activity on devices. For more information about calculating hardware requirements for a BES12 environment, visit docs.blackberry.com/BES12 to see the *BlackBerry Enterprise Service 12 Performance Calculator*.

Log files

The size of log files for BES12 varies based on the number of devices in your organization's environment, the level of user activity on devices, and the logging levels that BES12 uses. It is a best practice to monitor and control the amount of disk space that the BES12 log files take up. For more information about configuring logging, visit docs.blackberry.com/BES12 to read the *BlackBerry Enterprise Service 12 Administration Guide*.

Hardware requirements: BES12

The following guidelines apply to a BES12 environment that supports email messages and app downloads. The environment can include BlackBerry 10, BlackBerry OS (version 5.0 to 7.1), iOS, Android, and Windows Phone devices.

Hardware requirements for up to 1000 devices

For up to 1000 devices, install BES12 and Microsoft SQL Server or Microsoft SQL Server Express (and optionally BES5 version 5.0.4 and the BlackBerry Administration Service) on one computer. A domain of this configuration can have a maximum of 1000 devices. The total of 1000 devices can include up to 500 BlackBerry OS (version 5.0 to 7.1) devices.

Server	Requirement
BES12 and Microsoft SQL Server or Microsoft SQL Server Express (and optionally BES5 version 5.0.4 and the BlackBerry Administration Service)	<ul style="list-style-type: none"> • One processor, Quad Core, 2.7 GHz (4 cores) or 4 vCPU • 12 GB of available memory • 64 GB of disk space

Hardware requirements for up to 5000 devices

For up to 5000 devices, install BES12 and optionally BES5 version 5.0.4 on one computer. Install Microsoft SQL Server on a separate computer. If you installed BES5 version 5.0.4, install the BlackBerry Administration Service on a separate computer.

One instance of this configuration can support up to 5000 devices, of which 2000 can be BlackBerry OS (version 5.0 to 7.1) devices. The best practice is to have a maximum of 1000 BlackBerry OS (version 5.0 to 7.1) devices.

You can have multiple instances of BES12 (including BES5 components) and multiple instances of the BlackBerry Administration Service. Multiple instances of BES12 require increased database CPU and memory. The best practice for this configuration is to have a maximum of eight BES12 instances.

The computers that BES12 are on must be physically located near the computer with the Microsoft SQL Server database. If BES5 version 5.0.4 components are installed on any computers, they must be physically located near the mail and messaging computers. The computers with the BlackBerry Administration Service must be physically located near the computer with the Microsoft SQL Server database.

Server	Requirement
BES12 (and optionally BES5 version 5.0.4 with up to 2000 BlackBerry OS (version 5.0 to 7.1) devices)	<ul style="list-style-type: none"> • Two processors, Quad Core, 2.7 GHz (8 cores) or 8 vCPU • 12 GB of available memory • 64 GB of disk space
Microsoft SQL Server	<p>For 5000 devices:</p> <ul style="list-style-type: none"> • One processor, Quad Core, 2.7 GHz (4 cores) or 4 vCPU • 4 GB of available memory • 64 GB of disk space <p>For 40,000 devices</p> <ul style="list-style-type: none"> • Two processors, Quad Core, 2.7 GHz (8 cores) or 8 vCPU • 12 GB of available memory • 64 GB of disk space, 600 IOPS throughout
BlackBerry Administration Service (optional)	<ul style="list-style-type: none"> • One processor, Quad Core, 2.7 GHz (4 cores) or 4 vCPU • 4 GB of available memory • 64 GB of disk space

Hardware requirements for up to 25,000 devices

For up to 25,000 devices, install BES12 and Microsoft SQL Server on separate computers. The total of 25,000 devices can include any mix of BlackBerry 10, Android, iOS, and Windows Phone devices.

Additional features and configurations create more connections and sessions between devices and the BES12 instances, which limits the number of devices that one instance can support. To support more devices, add more instances of BES12. Use the *BlackBerry Enterprise Service 12 Performance Calculator* to determine the minimum number of BES12 instances for your device configuration and workload.

The computers that BES12 is installed on must be physically located near the computer with the Microsoft SQL Server database. The BES12 computers do not need to be near the mail and messaging computers.

Server	Requirement
BES12	<ul style="list-style-type: none"> • Two processors, Quad Core, 2.7 GHz (8 cores) or 8 vCPU • 12 GB of available memory • 64 GB of disk space
Microsoft SQL Server	<ul style="list-style-type: none"> • One processor, Dual Core, 2.7 GHz (2 cores) or 2 vCPU • 6 GB of available memory • 64 GB of disk space

Hardware requirements for up to 150,000 devices

For up to 150,000 devices, install multiple instances of BES12 and optionally, multiple instances of BES5 version 5.0.4, and the BlackBerry Administration Service.

One instance of BES12 can support up to 25,000 BlackBerry 10, iOS, Android, and Windows Phone devices.

Additional features and configurations create more connections and sessions between devices and the BES12 instances, which limits the number of devices that one instance can support. To support more devices, add more instances of BES12. Use the *BlackBerry Enterprise Service 12 Performance Calculator* to determine the minimum number of BES12 instances for your device configuration and workload.

The computers that BES12 is installed on must be physically located near the computer with the Microsoft SQL Server database. The BES12 computers do not need to be near the mail and messaging computers.

One instance of BES5 version 5.0.4 can support up to 2000 BlackBerry OS (version 5.0 to 7.1) devices. The computers with the BlackBerry Administration Service must be physically located near the computer with the Microsoft SQL Server database.

Server	Requirement
BES12	Install enough instances of BES12 to support the number of devices. <ul style="list-style-type: none"> • Two processors, Quad Core, 2.7 GHz (8 cores) or 8 vCPU • 12 GB of available memory • 64 GB of disk space
BES5 version 5.0.4	Install as many BES5 instances as required to support the number of devices, up to a maximum of 50 pairs of BES5 servers, which can be regionally distributed and must be physically located near the applicable mail and messaging computers.
BlackBerry Administration Service (for BES5 version 5.0.4)	Up to six BlackBerry Administration Service instances, which must be physically located near the computer with the Microsoft SQL Server database.

Server	Requirement
Microsoft SQL Server	<ul style="list-style-type: none"> • Two processors, Hex Core, 2.7 GHz (12 cores) or 12 vCPU • 12 GB of available memory • 64 GB of disk space, 2200 IOPS for 150,000 devices

Hardware requirements: BlackBerry Router

The following requirements apply to the computer that you install a standalone BlackBerry Router on.

Number of activated devices	Requirement
1 to 50,000	<ul style="list-style-type: none"> • One processor, Quad Core, 2.7 GHz (4 cores) or 4 vCPU • 4 GB of available memory • 64 GB of disk space

Designing a deployment plan

BES12 installation and upgrade

You can deploy BES12 in your organization's environment in several ways, depending on whether or not you have other EMM solutions from BlackBerry installed. You can install BES12 if your organization has:

- no other EMM solutions from BlackBerry
- BES5
- BES10

Note: You cannot install BES12 on a computer that has both BES5 and BES10 installed on it.

Follow the instructions in the *BlackBerry Enterprise Service 12 Installation Guide* to install BES12. After the installation is complete, follow the instructions in the *BlackBerry Enterprise Service 12 Licensing Guide* and the *BlackBerry Enterprise Service 12 Configuration Guide* to finish setting up your BES12.

BES12 Configuration Tool

If your organization plans to support more than 500 users, use the BES12 Configuration Tool to calculate the number of SRP IDs you require. After you install BES12, run the BES12 Configuration Tool to import the SRPs into the BES12 database before you add or migrate users. The BES12 Configuration Tool is included with the BlackBerry Enterprise Service 12 software. You can also download the tool from the Enterprise section of www.blackberry.com.

BES12 Readiness Tool

You can use the BES12 Readiness Tool to check system requirements before you run the BES12 setup application. The BES12 Readiness Tool is included with the BlackBerry Enterprise Service 12 software. You can also download the tool from the Enterprise Section of www.blackberry.com.

Prerequisites

Your environment and the computer you install BES12 on must meet the BES12 requirements. For more information, see [BES12 requirements](#).

BES5 must be at version 5.0.4 MR10 or later.

BES10 must be at version 10.2.3 or later.

Note: To upgrade from BES5 to BES12 on a different computer, you require another SRP, an authentication key, and CALs.

Upgrading from BES5 to BES12

You can use the BES12 management console to manage all your domain users, groups, apps, policies, profiles, BlackBerry OS (version 5.0 to 7.1), BlackBerry 10, iOS, Android, and Windows Phone devices. However, you must use the BlackBerry Administration Service to configure VPN profiles, Wi-Fi profiles, and software updates for BlackBerry OS (version 5.0 to 7.1) devices.

After the upgrade, distributed BES5 components remain in place and continue to function as usual. However, the BlackBerry Router that you originally installed with your BES5 continues to work only for the components that are used to manage BlackBerry OS devices. If you install a new instance of the BlackBerry Router with BES12, you can configure it to work with all components.

CAUTION: After an upgrade from BES5 to BES12, you cannot roll back to the BES5 database. Before you begin an upgrade, back up the BES5 database.

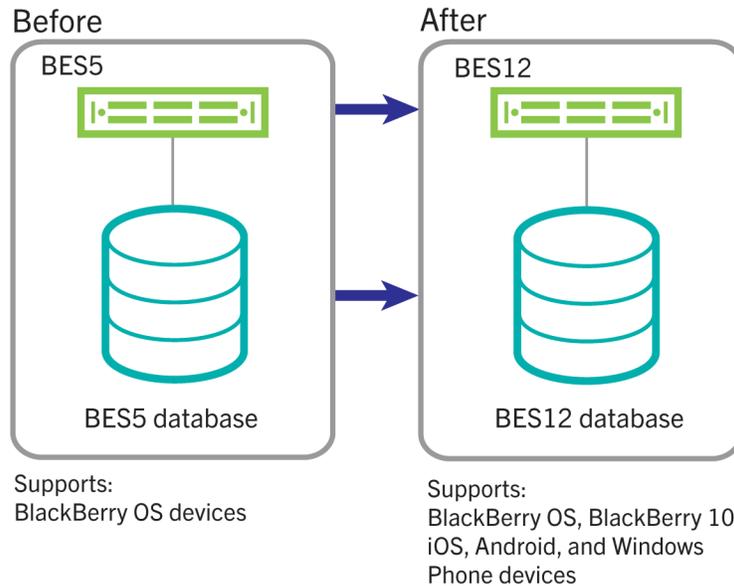
Upgrading from BES5 to BES12 in an existing domain

To upgrade from BES5 to BES12 in an existing domain, you can install BES12 on the same computer as or on a different computer than an existing BES5 database.

Follow the instructions in the *BlackBerry Enterprise Service 12 Installation Guide* to install BES12 and point it to the BES5 database to upgrade.

Note: If you install BES12 on the same computer as the existing BES5 database, make sure that the computer meets the hardware requirements for BES12.

Note: If you install BES12 on the same computer as the existing BES5 database, performance issues can occur if the number of users and devices exceed the optimum for a single computer environment. To accommodate more than the recommended number of users and devices for a single computer environment, install BES12 on a separate computer, or install additional instances of BES12 after the upgrade is complete.



Choose this option if:

- You want to upgrade an existing BES5 BlackBerry Configuration Database to a BES12 database.
- If you do not need to consolidate any domains
- You need to retire existing BES5 instances
- You do not want to deploy another instance

Pros

- The ability to have BlackBerry OS (version 5.0 to 7.1) devices supported in BES12
- You do not necessarily need another computer

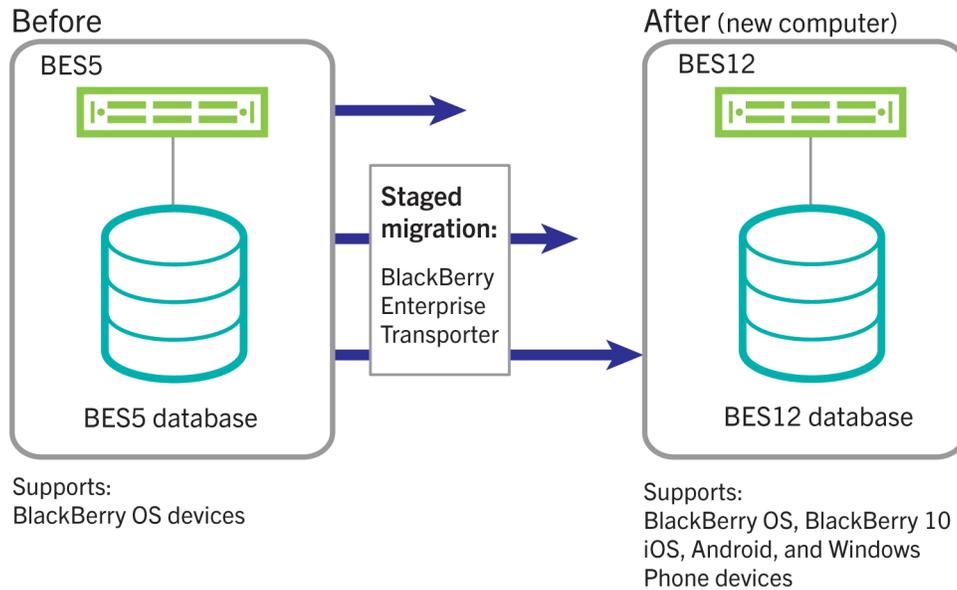
Cons

- A global service interruption while the BES5 database is upgraded
- The existing BES5 environment is affected

Upgrading from BES5 to BES12 in a new domain

- To upgrade from BES5 to BES12 in a new domain, install a BES5 instance on a new computer (to do this, you need another SRP, an authentication key, and CALs).
- Follow the instructions in the *BlackBerry Enterprise Service 12 Installation Guide* to install BES12 on the new computer. The BES12 setup application upgrades the new BES5 BlackBerry Configuration Database to a BES12 database.

- Next use BlackBerry Enterprise Transporter to move the IT policies, profiles, users, and devices in increments from the original BES5 to the BES12 database on the new computer. Service interruptions occur only for the batch of users that you are moving from the original BES5 database to the new BES12 database.



Choose this option if:

- You want to retire existing BES5 instances
- It is too time-consuming to upgrade existing BES5 instances to BES5 version 5.0.4 MR10 or later

Pros

- The ability to have BlackBerry OS (version 5.0 to 7.1) devices supported in BES12
- You can move data at your own pace
- No impact to the existing BES5 environment

Cons

- You must build a new BES5 domain
- You must install another server

Upgrading from BES10 to BES12

You can use the BES12 management console to manage BlackBerry OS (version 5.0 to 7.1), BlackBerry 10, iOS, Android, and Windows Phone devices.

Decisions

Decide if you want to move your BES10 IT policies, profiles, groups, users, and devices to BES12.

If you do want to move your BES10 IT policies, profiles, groups, users, and devices to BES12, decide if you want to install BES12 on the same computer as BES10 or on another computer.

Decide when the particular stages of the migration will be done, and who will do them.

Considerations	Same computer	Different computer
Additional hardware required	No	Yes
Service outage for all BES10 users	Yes (when you uninstall BES10)	No
Move a pilot group of users for testing before moving the rest of the users	Yes	Yes
Performance issues	Possible (if the number of users and devices exceed the optimum for a single computer environment) – see Tip	Unlikely

Tip: If you expect to exceed the recommended number of users and devices in a single computer environment, you can install additional instances of BES12 after the upgrade to accommodate more users and devices.

Installing BES12 on the same computer as BES10

To install BES12, follow the instructions in the *BES12 Installation Guide*. The setup application creates a BES12 database.

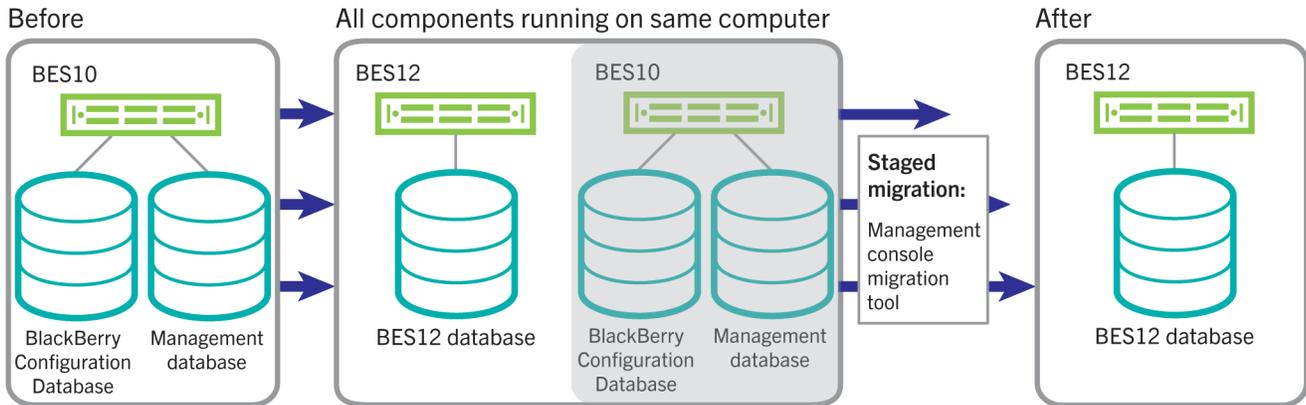
Note: If you plan to retain the BES10 instance for a long period of time, do not install BES12 on the same computer.

Note: If you install BES12 on the same computer as BES10, make sure that the computer has enough memory to meet the requirements of both BES10 and BES12.

CAUTION: After you install BES12 on the same computer as a BES10 instance, do not modify or upgrade the BES10 instance.

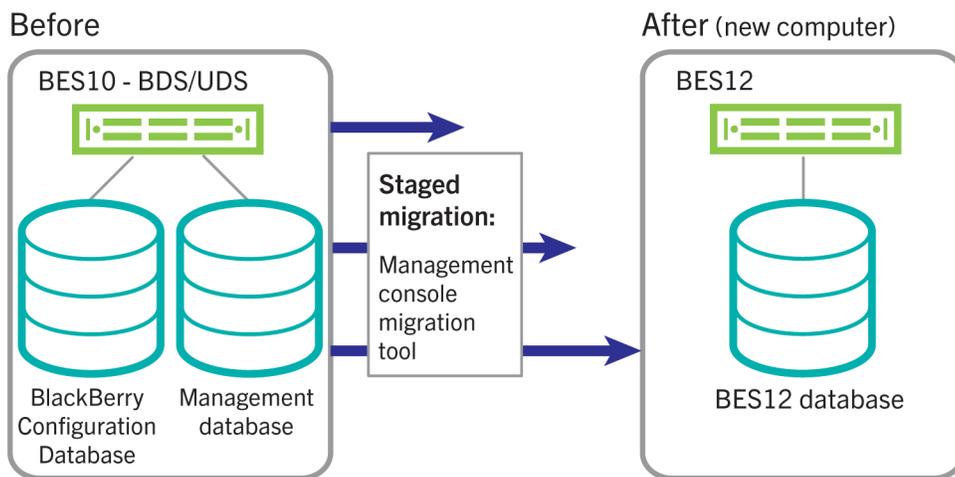
If you install BES12 on the same computer as BES10, you should migrate your IT policies, profiles, groups, users, and devices from BES10 to BES12 as soon as possible, and then uninstall the BES10 instance.

When you install BES12 on the same computer as BES10, there is a service interruption when you uninstall BES10 after the upgrade is complete.



Installing BES12 on a separate computer from BES10

To install BES12, follow the instructions in the *BlackBerry Enterprise Service 12 Installation Guide*. Install BES12 on a different computer than the existing BES10 instance. The setup application creates a BES12 database. When you install BES12 on another computer, there is no service interruption because you can uninstall BES10 or decommission the BES10 computer without affecting the new BES12 computer.



Migrating BES10 data to BES12

To move BES10 IT policies, profiles, group names, users, and devices from BES10 to BES12, follow the instructions in the *BlackBerry Enterprise Service 12 Configuration Guide*. You use the BES12 management console to move BES10 data to BES12.

Note: Before you migrate BES10 data to BES12, you must ensure that the BES10 databases are defragmented.

You can choose to move users and devices in stages from the BES10 BlackBerry Configuration Database and Management Database to BES12.

After all BES10 data has been moved, you can uninstall BES10 and delete or archive the BlackBerry Configuration Database and Management Database.

BES10 data must be moved to BES12 as follows:

1. Optionally, you can move the BES10 IT policies, profiles, and groups to BES12. You must move all of the IT policies, profiles, and groups at the same time.
2. Next, you copy your users. You can copy the users in batches, for example, a test batch of users, or all users that belong to a particular group. After you copy your users, they remain active on the BES10 instance.
3. Last, you move the devices. Once you move a device, it is deactivated on BES10 and reactivated on BES12. Only iOS device users need to confirm the reactivation. For all other device users, the reactivation is transparent.

Upgrading from BES5 and BES10 to BES12

You can install BES12 if you have both a BES5 and a BES10 installed in your organization.

Note: You cannot install BES12 on a computer that has both BES5 and BES10 installed on it.

To upgrade from BES5 and BES10 to BES12, you must first do one of the following:

- Upgrade the BES5 database to BES12
- Install a new BES5 instance, upgrade its database to BES12, and move the data from the original BES5

For more information, see [Upgrading from BES5 to BES12](#).

Second, move the BES10 data to the new combined BES5 and BES12 database. For more information, see [Migrating BES10 data to BES12](#).

Load-balancing data for BlackBerry 10 devices

If you install multiple instances of BES12 in the same domain, data for BlackBerry 10 devices is load-balanced equally across all healthy instances. For example, if you install three instances of BES12 and the domain includes 3000 BlackBerry 10 devices, BES12 assigns 1000 devices to each instance. Load-balancing occurs only if the domain includes more than 500 BlackBerry 10 devices.

Each BES12 instance uses the same SRP ID and connects to the same BES12 database. The components on each instance are all running and actively managing data for all device types, except for the BlackBerry Affinity Manager and BlackBerry Work Connect Notification Service. Only one instance of the BlackBerry Affinity Manager and the BlackBerry Work Connect Notification Service are active. You can view the status of each instance in the management console.

For more information about high availability and load balancing, visit docs.blackberry.com/BES12 to read the *BlackBerry Enterprise Service 12 Configuration Guide*.

Supporting the deployment

6

Mitigating issues during deployment

Many of the items to consider when planning the support of your BES12 deployment are similar to items you looked at when you assessed your organization's environment.

Hardware

Possible issue	Mitigation options
<ul style="list-style-type: none"> The hardware does not work or does not meet BES12 requirements Not all hardware is available 	<p>Before the planned installation date:</p> <ul style="list-style-type: none"> Check all hardware before the planned installation date to verify that it is in working order and that it meets all BES12 hardware requirements. Prepare one or two extra computers in case a computer stops working on the planned installation date. <p>During installation:</p> <ul style="list-style-type: none"> If you must install multiple instances of BES12, stage the deployment so that you complete a full installation on one computer first to make sure that all hardware is working. Install the BlackBerry Router later (if applicable).

Software

Possible issue	Mitigation options
<ul style="list-style-type: none"> Port conflicts The computer's operating system does not meet BES12 requirements The BES12 setup application does not work 	<p>Before the planned installation date:</p> <ul style="list-style-type: none"> Run the BES12 Readiness Tool on the computers you plan to install BES12 on. The BES12 Readiness Tool helps you determine whether or not the computers meet the minimum requirements for installing BES12.

Possible issue	Mitigation options
	<ul style="list-style-type: none"> Make sure all application servers, such as Exchange ActiveSync and the mail servers, are active, running, and tested.

Network

Possible issue	Mitigation options
<ul style="list-style-type: none"> Required firewall ports are not open BES12 instances cannot communicate with each other BES12 cannot communicate with the BlackBerry Infrastructure BES12 cannot communicate with application or content servers 	<p>Before the planned installation date:</p> <ul style="list-style-type: none"> Run the BES12 Readiness Tool on the computers you plan to install BES12 on. The BES12 Readiness Tool helps you determine whether or not the computers meet the minimum requirements for installing BES12. Create a detailed list of the ports that are required. Confirm with your networking team that the ports are open.

Users, devices, device control, and licenses

Possible issue	Mitigation options
<ul style="list-style-type: none"> Users were added between the time of planning and the time of deployment The type of activation planned for each user group was changed Test activations are not working 	<p>Depending on device type, number of devices, and activation type, you may have fewer licenses than you need when it is time to activate devices. In this case, you can activate only the key users and add more licenses as soon as possible.</p> <p>When dealing with activation, app, IT policy, or profile issues during deployment, make sure that:</p> <ul style="list-style-type: none"> You have enough licenses for the activation type. You have created or imported the correct IT policies and profiles and assigned them to the user that you are testing. If you are not registering users with the BlackBerry Infrastructure, make sure that you have the correct BES12 web address to enter during activation. Application servers are accessible by the devices and by BES12. The devices are compatible with BES12.

Database

Possible issue	Mitigation options
<ul style="list-style-type: none"> The BES12 database does not install The existing BES5 database is not accessible The upgrade from BES5 to BES12 does not complete 	<p>Before the planned installation date:</p> <ul style="list-style-type: none"> Check all hardware before the planned installation date to verify that it is in working order and that it meets all BES12 hardware requirements. Install and test the database. Test all connectivity between the computer that will host BES12 and the database. Perform a test upgrade of a copy of the BES5 database. For more information about backing up the BES5 database before an upgrade, visit docs.blackberry.com/BES5 to read the <i>BlackBerry Enterprise Server Administration Guide</i>.

Returning to a previous environment

Most organizations cannot afford a long service interruption while troubleshooting. Therefore, before a database upgrade, you should plan for the ability to return to the previous environment, in case any issues arise.

Returning to the previous environment is not as simple as stopping the upgrade, especially if data was being migrated when an issue occurred.

To prepare to return to your previous environment, before the planned installation date:

- Back up the existing BES5 or BES10 databases.
- If you use a virtual environment, take a snapshot of it.

If you encounter an issue during or after installing BES12, collect data about the issue before you return to your previous environment so that you can determine its root cause.

For more information about backing up the BES5 BlackBerry Configuration Database, visit docs.blackberry.com/BES5 to read the *BlackBerry Enterprise Server Administration Guide*.

For more information about backing up the BES10 BlackBerry Configuration Database, visit docs.blackberry.com/BES10 to read the *BlackBerry Enterprise Service 10 Administration Guide*.

Glossary

BES5	BlackBerry Enterprise Server 5
BES10	BlackBerry Enterprise Service 10
BES12	BlackBerry Enterprise Service 12
BES12 instance	BES12 instance refers to all BES12 components installed on one computer except the BlackBerry Router, which is an optional component that is installed separately. A BES12 instance is sometimes referred to as a "unit of scale."
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.
EMM	Enterprise Mobility Management
SRP	Server Routing Protocol
SRP ID	The SRP ID is a unique identifier that an EMM solution from BlackBerry uses to identify itself to the BlackBerry Infrastructure during SRP authentication.
TCP	Transmission Control Protocol

Product documentation

8

To read the following guides or other related materials, visit docs.blackberry.com/BES12.

Category	Resource	Description
Overview	<i>BlackBerry Enterprise Service 12 Product Overview</i>	<ul style="list-style-type: none"> • Introduction to BES12 and its features • Finding your way through the documentation • Architecture
	<i>Enterprise Solution Comparison Chart</i>	<ul style="list-style-type: none"> • Comparison of what features are available across different BlackBerry enterprise solutions
	<i>BlackBerry Enterprise Service 12 Architecture and Data Flow Reference Guide</i>	<ul style="list-style-type: none"> • Descriptions of BES12 components • Descriptions of activation and other data flows, such as configuration updates and email, for different types of devices
Release notes	<i>BlackBerry Enterprise Service 12 Release Notes</i>	<ul style="list-style-type: none"> • Descriptions of known issues and potential workarounds
Installation and upgrade	<i>BlackBerry Enterprise Service 12 Compatibility Matrix</i>	<ul style="list-style-type: none"> • 3rd party software that is compatible with BES12
	<i>BlackBerry Enterprise Service 12 Performance Calculator</i>	<ul style="list-style-type: none"> • Tool to estimate the hardware required to support a given workload for BES12
	<i>BES12 Preinstallation Checklist</i>	<ul style="list-style-type: none"> • Checklist of requirements to check before you install or upgrade your environment
	<i>BlackBerry Enterprise Service 12 Planning Guide</i>	<ul style="list-style-type: none"> • System requirements • Planning BES12 deployment for an installation or an upgrade from BES5 or BES10
	<i>BlackBerry Enterprise Service 12 Installation Guide</i>	<ul style="list-style-type: none"> • Installation instructions
Configuration	<i>BlackBerry Enterprise Service 12 Licensing Guide</i>	<ul style="list-style-type: none"> • Descriptions of different types of licenses • Instructions for activating and managing licenses

Category	Resource	Description
Administration	<i>BlackBerry Enterprise Service 12 Configuration Guide</i>	<ul style="list-style-type: none"> • Instructions for how to configure server components before you start administering users and their devices • Instructions for migrating BES10 data from an existing BES10 database
	<i>BlackBerry Enterprise Service 12 Administration Guide</i>	<ul style="list-style-type: none"> • Basic and advanced administration for all supported device types, including BlackBerry 10 devices, iOS devices, Android devices, Windows Phone devices and BlackBerry OS (version 5.0 to 7.1) and earlier devices • Instructions for creating user accounts, groups, roles, and administrator accounts • Instructions for activating devices • Instructions for creating and assigning IT policies and profiles • Instructions for managing apps on devices • Descriptions of profile settings
	<i>BlackBerry Enterprise Service 12 Policy Reference Spreadsheet</i>	<ul style="list-style-type: none"> • Descriptions of IT policy rules for BlackBerry 10 devices, iOS devices, Android devices, Windows Phone devices and BlackBerry OS (version 5.0 to 7.1) and earlier devices
	<i>Supported Features by Device Type</i>	<ul style="list-style-type: none"> • Comparison of what device management features are supported for each type of device in BES12
	<i>Getting started. 5 Steps To Get Your Devices Active</i>	<ul style="list-style-type: none"> • Minimum requirements to configure to get you started with activating devices
Security	<i>BlackBerry 10 Security Overview</i>	<ul style="list-style-type: none"> • Introduction to BlackBerry 10 security • Description of how BlackBerry 10 protects data at rest and in transit • Description of our security platform, from the device to the BlackBerry Infrastructure
	<i>BlackBerry Enterprise Service 12 Security Guide for BlackBerry</i>	<ul style="list-style-type: none"> • Description of the security maintained by BES12, the BlackBerry Infrastructure, and BlackBerry 10 devices to protect data and connections • Description of the BlackBerry 10 OS

Category	Resource	Description
		<ul style="list-style-type: none"> <li data-bbox="760 281 1520 344">• Description of how work data is protected on BlackBerry 10 devices when you use BES12
	<i>BlackBerry Enterprise Service 12 Security Guide for iOS, Android, and Windows Phone</i>	<ul style="list-style-type: none"> <li data-bbox="760 401 1520 506">• Description of the security maintained by BES12, the BlackBerry Infrastructure, and work space-enabled devices to protect work space data at rest and in transit <li data-bbox="760 527 1520 590">• Description of how work space apps are protected on work space-enabled devices when you use BES12
Resources for enterprise users	<i>BES12 Self-Service User Guide</i>	<ul style="list-style-type: none"> <li data-bbox="760 653 1198 684">• Instructions for activating devices <li data-bbox="760 705 1260 737">• Instructions for protecting a lost device

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