

High Availability with BlackBerry Enterprise Server 10.1

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During the week of the 2013 BlackBerry

Live Conference, BlackBerry officially released the 10.1 version of their flagship BlackBerry Enterprise Server (BES). I've been working with the new version since that time to engineer a new high availability (HA) BlackBerry 10.1 infrastructure for my firm and have become familiar with the many enhancements made with this release.

High Availability

First and foremost, BES 10.1 adds the HA that was lacking in the original 10.0 release. There are four main features to the high availability model in BES 10.1. The server infrastructure can now support database mirroring (as in 5.x), BlackBerry Administration Service via DNS round robin (as in 5.x), BlackBerry Device Service HA via node pairs in an instance (as in 5.x) and Universal Device Service high availability via failover instances.

- **Database Mirroring:** The first three HA models are well-known to those who have already architected high availability solutions for BES 5.x. Of these models, database mirroring has been removed from the installer, but can be enabled by following the instructions outlined in BlackBerry Knowledge Base article KB34373. The functionality of this feature does not change, even if the native mirroring has been removed from the installation process.
- **BlackBerry Administration Service:** Installing the BlackBerry Administration Service (BAS) on an alternate computer was recommended for large deployments in 5.x, and that does not change in the 10.1 release. In fact, I would highly recommend this in any virtualized environment. The BAS on 5.x used to consume approximately 1 GB of memory. That has increased to over 2 GB in the 10.1 release. To take advantage of the HA functionality of the BlackBerry Administration Services,

install at least two nodes with only the BAS (include the Web Desktop if you so desire) connected to each BlackBerry Configuration Database.

- **BlackBerry Instance Node Pairs:** Like the BES 5.x server, you can run the 10.1 server using highly available pairs of nodes as a single instance. Think of an "instance" as a single connection to the BlackBerry Network Operations Center. Each instance requires a different Server Routing Protocol (SRP) number from BlackBerry. If you are retiring legacy BlackBerry servers, SRPs can be repurposed for your new infrastructure.
- **Universal Device Service Switchover:** The one complete departure from the BES 5.x infrastructure in BES 10.1 is the automatic inclusion of the Universal Device Service (UDS) during the installation. In the current revision, UDS cannot run in a truly high availability mode. Instead, the service behaves as a manual switchover. Each BES 10.1 server installed has the UDS on it, but only one server can be online at a time. The UDS core services are linked to a specific BlackBerry instance (either a standalone server or node pair). If configured on a node pair, the UDS core services honor the active/standby status and will follow the active node. However, if the UDS core needs to move from one BlackBerry instance to another, manual intervention is required from the BlackBerry Administration Service.
Finally, the UDS Administration Service should be running on only one administration server. If you are using DNS round-robin for BAS and the "primary" server fails, you must enable and start the UDS Administration Service on the active BAS.

Installer

The installer process has changed slightly from that in previous versions. In many ways, the software has gotten significantly more



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complex, but the installer has been simplified (at least after the first server has been installed). The installer only has four options now. When running the installer, you are prompted to install the BlackBerry core services, the core services as a second member of a HA pair, the BlackBerry Administration Services or the BlackBerry Web Desktop components. Other than specifying ports and passwords, that's the limit of your selections. If you want to add or remove individual services, rerun the installer. The entry in the Add/Remove Programs menu is only for complete uninstallation of the product.

My recommended installation would be to configure the DNS round-robin first, then install your first administration server (which holds the Licensing Service), and finally your first server with the core services. After that, you can easily add additional servers to build the infrastructure to meet your HA needs.

Lessons Learned

With any software installation, there are lessons learned. Avoid the following pain points with your BES 10.1 install.

- **Licensing Service:** Read all the documentation regarding the Licensing Service. It is installed on the first server, which has the Administration Services. Moving the current licensing server to another server is not difficult, but you need to reinitialize all your Client Access Licenses if you do so, and this may require reactivation.

Before you install your first BES 10.1 server, you'll need to upgrade your Client Access Licenses from the legacy BlackBerry server. According to many forum postings, the Licensing Service has created an unnecessary learning curve for people who wrongly assume the BlackBerry server behaves exactly like previous versions. Don't fall into this trap. Read the documentation and leverage your support contacts for more information on the process.

- **Server Administration Tools:** When you get a new server provisioned within your infrastructure, that server might be preinstalled with server administration tools. If you try to run the installer with the IIS Manager tools installed, it will most likely fail. Do yourself a favor beforehand, and remove the tools. Though IIS is a prerequisite for installing the core services, it will be automatically reinstalled by the BES installer.
- **Upgrading Legacy Systems:** The BlackBerry Management Studio (formerly Mobile Fusion) for BES 10.1 can connect to your legacy 5.0 infrastructure, but there is a minimum version requirement. Make sure you upgrade your legacy BlackBerry Administration Services to at least 5.04 MR4 before connecting it to the new BlackBerry Management Studio.

There are many more features and nuances to this upgrade, including BES 10.1 being offered as a cloud service and improved virtualization options. Take some time to learn more about this offering. It's clear that with this latest release, BlackBerry is taking another step toward keeping up with their competitors. 



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