Cover Sheet – License Server Redundancy

1. How much of this content did you write? All of it

2. The document represents existing content that was revised.

3. The existing content was from a spec provided by engineering. I obtained the screenshots during my own testing of the feature.

4. Light editing was performed by a Senior Technical Writer on the Documentation team.

5. There are no code examples in this writing sample.

6. The document was written using our company style guide, which is primarily based on the Microsoft Manual of Style (~95%) with some custom elements (~5%).

7. Setting up the triad relationship scenario to ensure accuracy was challenging. It required installing the product on three virtual machines (VMs) and ensuring that those VMs could see each other on the network.

8. This document was part of a larger documentation set making up an administrator guide describing license server redundancy for the product. For brevity, I've deleted the front matter pages and the subsequent pages describing the "Backup Relationship." I owned this entire administrator guide.

Overview

License server redundancy provides an automatic failover solution to keep your print production environment running seamlessly in the event that one license server fails.

When BarTender is installed, you can use Administration Console to configure redundancy by setting up license servers in a backup relationship that uses two servers or in a triad relationship that uses three. Then, if the main or primary server cannot be reached by a BarTender client computer for any reason, the client automatically connects instead to the other servers in the relationship.

Comparing the Triad and Backup Server Relationships

Understanding the differences between the triad and backup server relationship will help you determine which configuration is the best choice for your organization.

Triad Relationships

A triad server relationship generally requires less management effort after setup is complete, but the following points should be considered before you configure this relationship:

- A triad relationship requires three servers, but these three serves behave like a single server and require only one license.

- Only Enterprise edition licenses can be used for triad relationships.

- If network connectivity among servers is not reliable, using a triad server configuration can be problematic. When connectivity between the servers is not reliable, the need to satisfy quorum becomes a factor of failure. Though the triad relationship has implemented tolerable timeouts and connection retries between triad servers, if the connection is broken repeatedly for several minutes or longer, the triad will fail. If your network connections are subject to these types of interruptions, a backup server relationship is the preferred choice.

Backup Relationships

A backup server relationship can be more flexible and have fewer restrictions than a triad relationship, but the following points should be considered before you configure this relationship:

- A backup relationship requires only two servers, and each server is fully operational when the machines cannot see one another, but each server requires its own license.

- Both servers in a backup relationship can host non-Enterprise edition licenses, but there must be at least one mapped license, which does require an Enterprise edition license.

- A backup relationship doesn't require a network connection between the main server and the backup server. However, extra care is required to make sure the server settings are synchronized so that failover will occur as expected. If network connection is available, server settings are synchronized automatically. If network connection is not available, users can still export settings from the main server and import them to the backup server to make sure the settings are synchronized.

- The servers in the backup relationship accept requests independently. BarTender clients can

set their current licenses to any licenses on either servers. In normal operation, users can use these two servers to share the loads. In the case of server crash, clients will failover to the other running server automatically, and when the server hosting the client's current license is back online, the client automatically switches back to its original server.

- Print usage statistics in the two servers are separate. They are not merged. So if a client fails over to the other server, its printer usage statistics are scattered between the two servers.

Triad Relationship

In a triad relationship, you configure three license servers to act as primary, secondary, and tertiary servers. These servers host the same licenses and share the same settings, so they behave like a single server. The servers maintain regular communications with each other to verify that at least two of the three - a quorum - are running and communicating. BarTender clients automatically connect to whichever server can process their requests.

Server Roles and Synchronization

When the primary server connects to either the secondary or tertiary server, it becomes the active server and can then process BarTender client requests.

If the primary server fails for any reason and cannot connect to either the secondary or tertiary server, it reports to the BarTender clients that the secondary server is now the active server (if it can do so) and then stops accepting client print requests. When this happens, the secondary server tries to connect to the tertiary server to confirm that the tertiary also cannot connect to the primary. If the connection and confirmation are made, the secondary server becomes the active server (and notifies the tertiary server about the change) and can then process requests. The secondary server periodically tries to contact the primary server, and if it succeeds, it transfers control back to the primary.

The tertiary server's role is to satisfy quorum. Single servers in a triad do not act alone. If both the primary and secondary servers become unavailable, the tertiary server does not process print requests but monitors the other servers for availability.

## Creating and Managing the Triad Relationship

To create a triad relationship, click **Setup Server Redundancy** on the **Redundancy** page in Administration Console to start the Redundancy Setup wizard. This wizard guides you through the process of naming the triad and selecting the servers that you want to use as the primary, secondary, and tertiary servers.

Viewing and Managing the Triad Relationship

After you create the triad relationship, it is displayed on the **Redundancy** page in Administration Console as a diagram of the three servers that provides information about the servers (including name, IP address, and port), the role and status of each server (including an indication of which one is currently the active server), and the number of licenses that the triad includes.
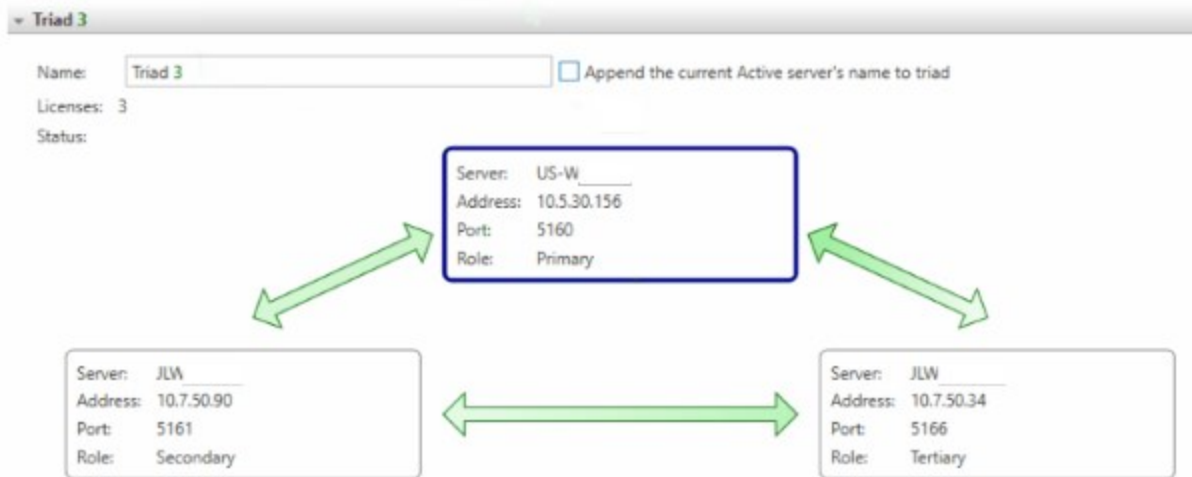
You can manage the triad's settings, such as changing the role of a selected server or replacing a server, by clicking ☰ to display a menu of management options.
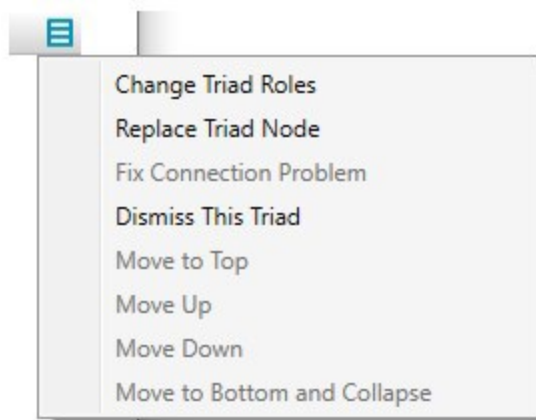
Changing the Triad Roles

You might want to change the role of a server in a triad, such as redesignating the secondary to the primary role. To do this, click ☰ , and then click **Change Triad Roles** to start the Change Triad Role wizard.

Replacing a Server

You might need to replace a server if it becomes damaged or unstable. You can do this without having to dismiss the triad relationship, which means that your license settings do not need to be changed, although a new triad relationship with the new server is created. To replace a server, click ☰ , and then click **Replace Triad Node** to start the Replace a Triad Node wizard.

Dismissing the Triad Relationship

To dismiss a triad relationship, click ☰ , and then click **Dismiss This Triad** to start the Dismiss the Triad wizard. You can always dismiss a triad, even if one or more servers are disconnected. If

the servers continue to host licenses and if at least two servers are connected, the wizard provides options for you to deactivate the licenses, move them to another server, or keep them in the triad's current active server.

Requirements

The following requirements must be met for the servers that you use when you configure a triad relationship:

- You have permissions to administer all three servers as configured in the access control rules, which are displayed under **Server Access** on the **Licensing** page in Administration Console.

- The server is running BarTender 2021 or a later version.

- At least one Enterprise edition license is installed and activated.

- The server is not already part of a triad or backup redundancy relationship.

- The server is not a provisional license server.

- The server is a printer-based license server.

Notes

- A client computer that is running BarTender 2019 can connect to a triad server.

- Triad redundancy can be created and managed only when the BarTender Suite is activated with an Enterprise license. However, regardless of the license edition, users can always dismiss a triad if they have permissions to administer all three servers as configured in the access control rules, which are displayed under **Server Access** on the **Licensing** page in Administration Console.

- Only Enterprise edition licenses can be used for triad relationships.

- Licenses that are activated for single-server use cannot work in a triad, and vice versa. Therefore, license reactivation is required after a triad is created and after it is dismissed.

- Licenses that are activated for a triad cannot work when one or more servers are replaced. Therefore, license reactivation is required after a server is replaced.

- Printer usage statistics for client computers are synchronized and merged automatically after a failover occurrence, so you can track printer usage regardless of whether the primary or secondary server was being used.

- If you are configuring a triad relationship while the servers cannot contact the Seagull Activation Server, the servers that you want to use must not be hosting licenses before you create the triad. If there are licenses on the servers, you must deactivate them before you create the triad and then reactivate them afterward.