

Spotlight® on SQL Server Enterprise 11.7.1

Federation Guide



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Quest Software Inc.

Attn: LEGAL Dept

4 Polaris Way

Aliso Viejo, CA 92656

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Legend

WARNING: A WARNING icon indicates a potential for property damage, personal injury, or death.

CAUTION: A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

An information icon indicates supporting information.

Spotlight on SQL Server Enterprise Federation Guide

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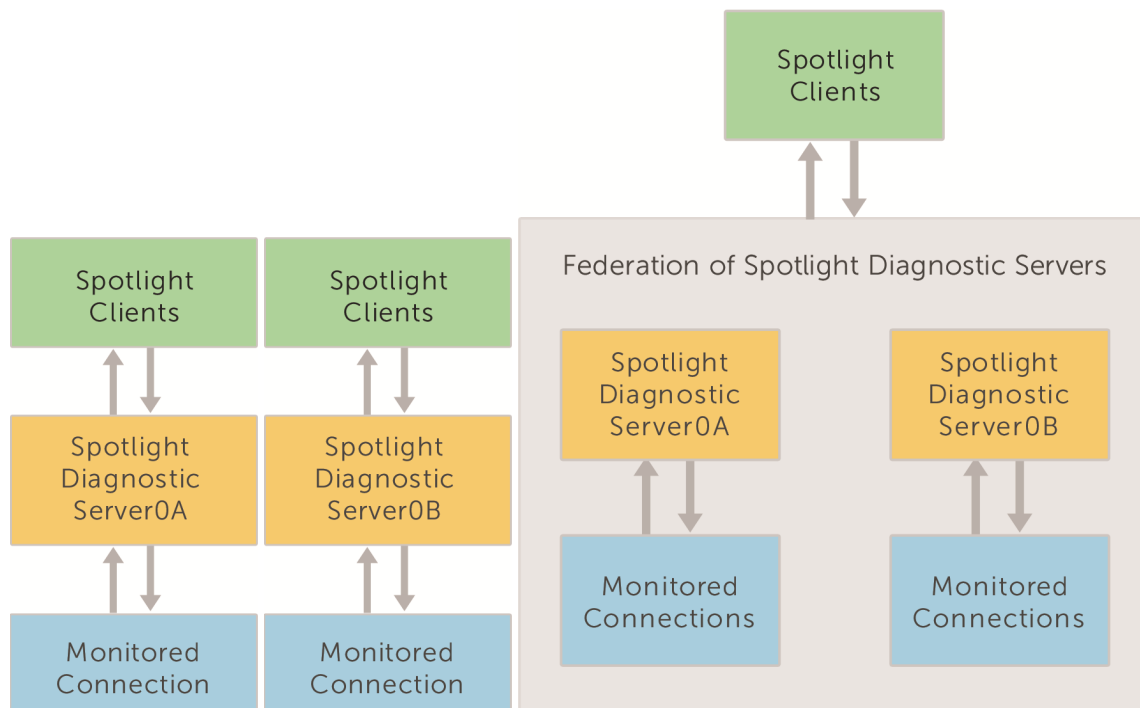
Why federation

The standard Spotlight configuration has one Spotlight Diagnostic Server. All connections are monitored through the Spotlight Diagnostic Server.

More than one Spotlight Diagnostic Server may be required when:

- The number of connections to monitor exceeds the design of one Spotlight Diagnostic Server. A single Spotlight Diagnostic Server is designed to monitor a maximum of 100 SQL Servers, Analysis Services or Replication instances and 100 Windows servers.
- Your organization is suited to the deployment of geographic hubs, where each geographic region deploys its own Spotlight Diagnostic Server.

Multiple Spotlight Diagnostic Server are deployed separately or as a federation.



Separate Spotlight deployments

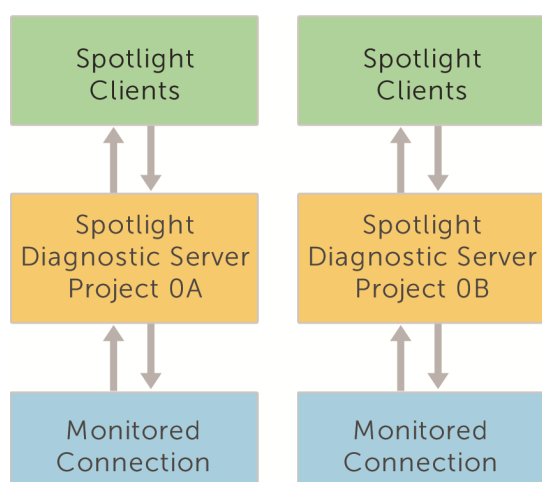
A Spotlight Client monitors connections from one Spotlight Diagnostic Server at a time. The deployments do not share custom views, templates and alarm actions.

Federation

A Spotlight Client monitors connections from all Spotlight Diagnostic Server in the federation. Spotlight Clients in the federation share the same custom views, templates, alarm actions and list of planned outages.

Make (add to) a federation

Start with two separate Spotlight deployments.



i Note: A Spotlight Diagnostic Server can connect to one federation at a time. Remove a Spotlight Diagnostic Server from one federation before adding it to a different federation.

The Spotlight Diagnostic Servers in the federation cannot be monitoring the same connections. Where duplicate connections exist, federation cannot proceed. Spotlight will prompt you to delete duplicate connections.

Each Spotlight Diagnostic Server in the federation must be running Spotlight version 11.6 or later.

Each Spotlight Diagnostic Server in the federation authenticates with one selected Spotlight Diagnostic Server in the federation (the Configuration server). Each Spotlight Diagnostic Server authenticates with the Configuration server using Windows authentication over TCP port 40303. The Windows account that each Spotlight Diagnostic Server is running under must be valid in the domain of the Configuration server. Spotlight Diagnostic Server running under the built in Windows accounts (local system or network service) cannot be federated.

All Spotlight Clients in the federation retrieve monitoring information directly from the Spotlight Diagnostic Server. TCP port 3843 must be open for incoming connections from all Spotlight Diagnostic Server in the federation.

We suggest that a VPN is implemented with a federated system for increased security.

Steps to make (add to) a federation

1. Open a Spotlight Client.
If the federation already exists, open any Spotlight Client connected to the federation. When federating two separate Spotlight Diagnostic Server, open a Spotlight Client connected to either Spotlight Diagnostic Server.
2. From the Spotlight Client, click **Configure | Diagnostic Server | Federate Diagnostic Servers**.
3. Click **Add**. Select the host of the Spotlight Diagnostic Server. The Spotlight Diagnostic Server should be installed and operational and accessible to the Spotlight Client.

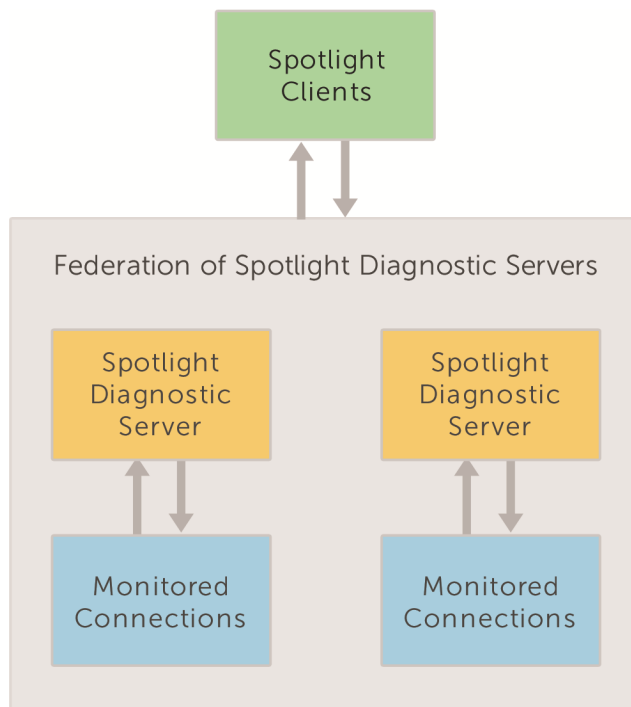


Table 1: On adding a Spotlight Diagnostic Server to the federation

| Spotlight | Description |
|-----------------------|--|
| Monitored connections | The Spotlight Clients connected to the Spotlight Diagnostic Server that has been added to the federation now connect to the federation of Spotlight Diagnostic Server. Spotlight Clients in the federation monitor connections from all Spotlight Diagnostic Server in the federation. Data to / from monitored connections is communicated directly from Spotlight Diagnostic Server to Spotlight Client. It is required that all Spotlight Clients have open communications with all Spotlight Diagnostic Server in the federation. |
| Custom views | Spotlight Clients in the federation have access to all custom views in the federation. The custom views from the newly joined Spotlight Diagnostic Server will be accessible to all Spotlight Clients in the federation. Any two custom views with the same name will be merged into the one view. |
| Alarm Actions | Spotlight Clients in the federation have access to all Alarm Action rules in the federation. The condition "The Diagnostic Server is..." is added to every pre-existing Alarm Action rule from the newly added Spotlight Diagnostic Server. Do nothing for Alarm Action rules specific to that |

| Spotlight | Description |
|-------------------------|--|
| | Spotlight Diagnostic Server. For Alarm Action rules applicable to the federation, remove the condition "The Diagnostic Server is..." and delete duplicate rules. |
| Planned Outages | Spotlight Clients in the federation have access to all scheduled planned outages for all Spotlight connections monitored in the federation. |
| Configuration templates | Spotlight Clients in the federation have access to all configuration templates in the federation. The configuration templates from the newly joined Spotlight Diagnostic Server will be accessible to all Spotlight Clients in the federation. Any two templates with the same name will both be renamed to remain separate. |
| Spotlight license | The Spotlight license applied to the Configuration server is applied to the federation. For more information, see Configuration server on page 11. |

Monitoring connections

Custom views





Any monitored connection in the federation can be added to any custom view. All Spotlight Clients have access to all custom views in the federation.







When a Spotlight Diagnostic Server joins a federation then the custom views from that Spotlight Diagnostic Server will be seen by all Spotlight Clients in the federation. Any two custom views with the same name will be merged into one view.

i Note: Spotlight Enterprise Views from all Spotlight Diagnostic Server in the federation will also be seen by all Spotlight Clients in the federation. If there are two Enterprise Views with the same name, the Enterprise View from the Configuration server will override the local Enterprise View. Note that Spotlight is deprecating Enterprise Views. We recommend taking advantage of the new Custom Views to monitor your SQL Server instances in groups.

Configure monitoring

Configure monitoring of Spotlight connections from any Spotlight Client in the federation.

| Icon | Ribbon Select | Description |
|---|---------------|---|
|  | Connections | Manage the connections monitored by Spotlight. For more information, see Add connections to the federation on page 9. |
|  | Alarms | Set the thresholds and severities that determine when an alarm is raised. Select any template or monitored connection in the federation to configure. |
|  | Alarm Actions | Set actions for Spotlight to take when an alarm is raised. Alarm Action Rules may be specific to one Spotlight Diagnostic Server or applied to all Spotlight Diagnostic Server in the federation. |
|  | Scheduling | Spotlight collects data according to these set schedules. Select any template or |

| Icon | Ribbon Select | Description |
|---|--------------------------|---|
| | | monitored connection in the federation to configure. |
|  | Planned Outage | Enter the scheduled maintenance times for the connections Spotlight monitors so Spotlight does not raise alarms and attempt to collect data during the outage period. Planned outages are listed for all monitored connections in the federation. |
|  | SQL Analysis | Enable SQL Analysis. Configure the filters used to gather SQL Analysis data. Select any template or monitored connection in the federation to configure. |
|  | SQL Server Response Time | Set the SQL statement that is used to measure SQL Server response time. Select any template or monitored connection in the federation to configure. |
|  | Custom Counters | Create and configure Custom Counters for monitoring connections to SQL Servers and Windows servers. Select any template or monitored connection in the federation to configure. |
|  | Error Log Entries | Request Spotlight raise an alarm when a specified entry is logged in the SQL Server error log. Select any template or monitored connection in the federation to configure. |
|  | Monitored Files | Track the growth of specified files (usually log files) on monitored Windows Servers. Select any template or monitored Windows connection in the federation to configure. |

Configuration templates

Spotlight Clients in the federation have access to all configuration templates in the federation.

The configuration templates from newly joined Spotlight Diagnostic Server will be accessible to all Spotlight Clients in the federation. Any two templates with the same name will both be renamed to remain separate.

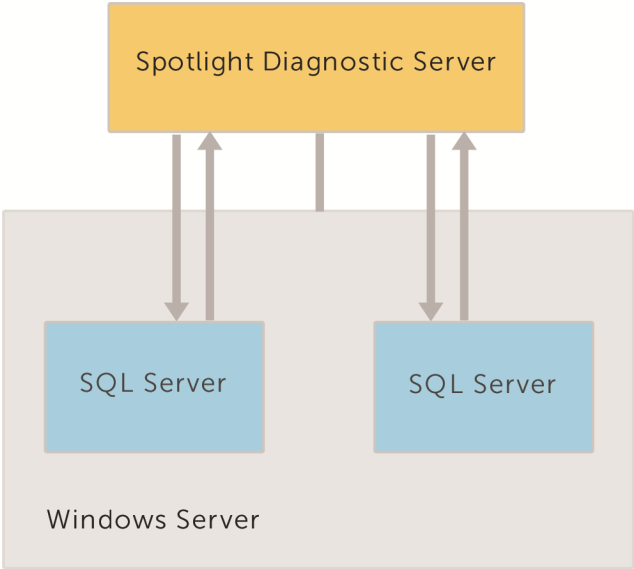
Add connections to the federation

You will be prompted to select the Spotlight Diagnostic Server when you add a connection to a federated system. The new connection will be monitored through the selected Spotlight Diagnostic Server.

i NOTE: A single Spotlight Diagnostic Server is designed to monitor a maximum of 100 SQL Servers, Analysis Services or Replication instances and 100 Windows servers.

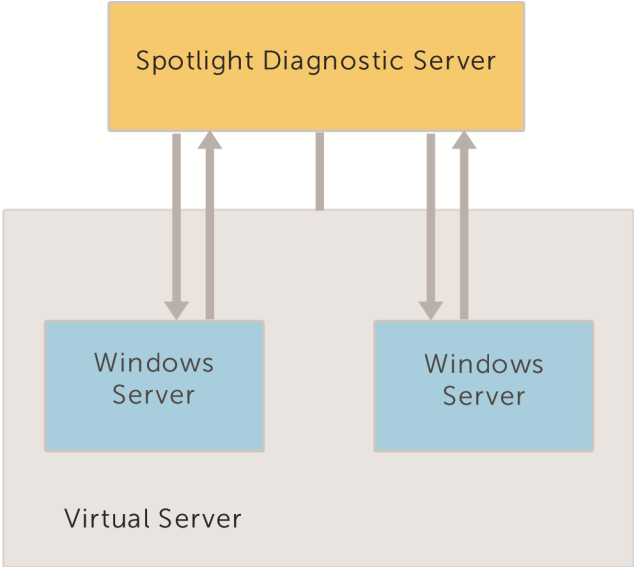
SQL Server connections

A SQL Server instance should be monitored on the same Spotlight Diagnostic Server as its SQL Server host.



Virtual environments

Where Windows hosts are in a virtual environment the Windows host should be monitored by the same Spotlight Diagnostic Server as the associated Hyper-V / VMware server.



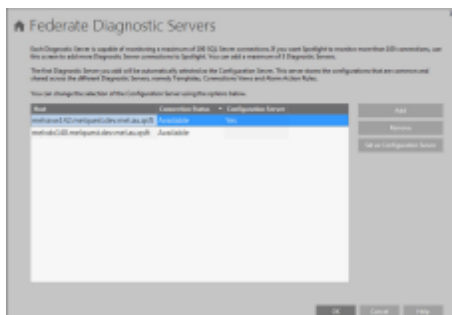
Configure operations

Any Spotlight Client in the federation can configure the operations of any Spotlight Diagnostic Server in the federation.

1. Open the Spotlight Client.
2. Click Configure | Diagnostic Server.
3. Select the Spotlight Diagnostic Server operation to configure (Auto Update - Use of Extended Events).
4. The dialog to configure the selected Spotlight Diagnostic Server operation opens. Select the Spotlight Diagnostic Server and set the new configuration.

Any Spotlight Client in the federation can configure the operations of the federation.

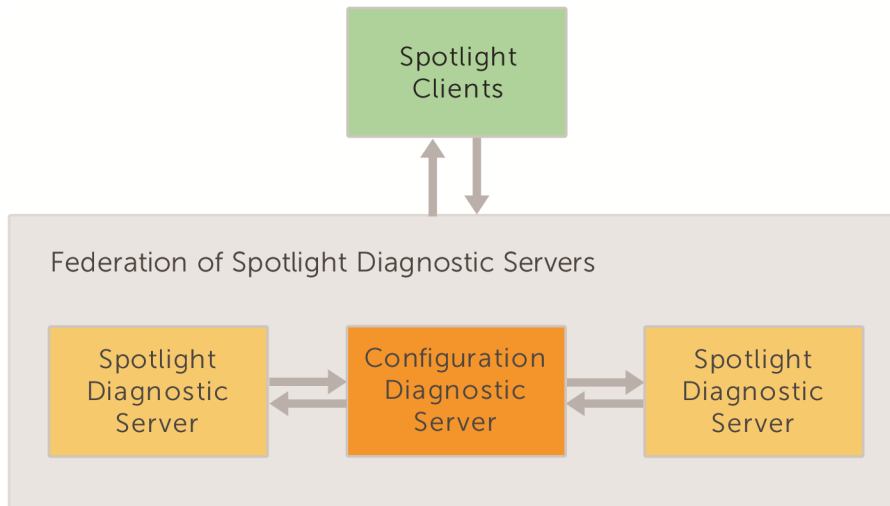
1. Open the Spotlight Client.
2. Click Configure | Diagnostic Server | Federate Diagnostic Servers.
3. Add / Remove Spotlight Diagnostic Server from the federation and set the Configuration server.



Configuration server

One Spotlight Diagnostic Server in the federation is selected as the Configuration server.

Configurations shared between the Spotlight Diagnostic Server in the federation are applied to the Configuration server. Other Spotlight Diagnostic Server in the federation poll the Configuration server for updates.



The following configurations are applied directly from the Spotlight Client to the Configuration server. Other Spotlight Diagnostic Server in the federation poll for updates from the Configuration server.

- Custom views
- Enterprise views
- Configured Alarm Actions
- Planned Outages
- Configuration templates

i Note: If the Configuration server is down then any changes made by a Spotlight Client to any of the above configurations will not be saved.

If any other Spotlight Diagnostic Server in the federation is offline then when it is online again it will poll to receive updates from the Configuration server. The Configuration server keeps transactions (recording changes to the above configurations) for 5 days.

Steps to assign the Configuration server

1. Open a Spotlight Client in the federation.
2. From the Spotlight Client, click **Configure | Diagnostic Server | Federate Diagnostic Servers**.
3. Select the Spotlight Diagnostic Server.
4. Click **Set as Configuration server**.

Spotlight Diagnostic Server authenticate with the Configuration server using Windows authentication over TCP Port 40303. For each Spotlight Diagnostic Server in the federation, the Windows account that the Spotlight Diagnostic Server is running under must be valid in the domain of the Configuration server.

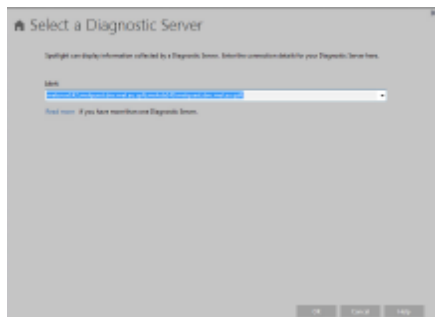
The Configuration server should have a reliable and fast Internet connection to each of the other Spotlight Diagnostic Server in the federation.

Spotlight Clients and the primary server

Connect a Spotlight Client to a federation by connecting the Spotlight Client to any Spotlight Diagnostic Server in the federation. This is the primary server for the Spotlight Client.

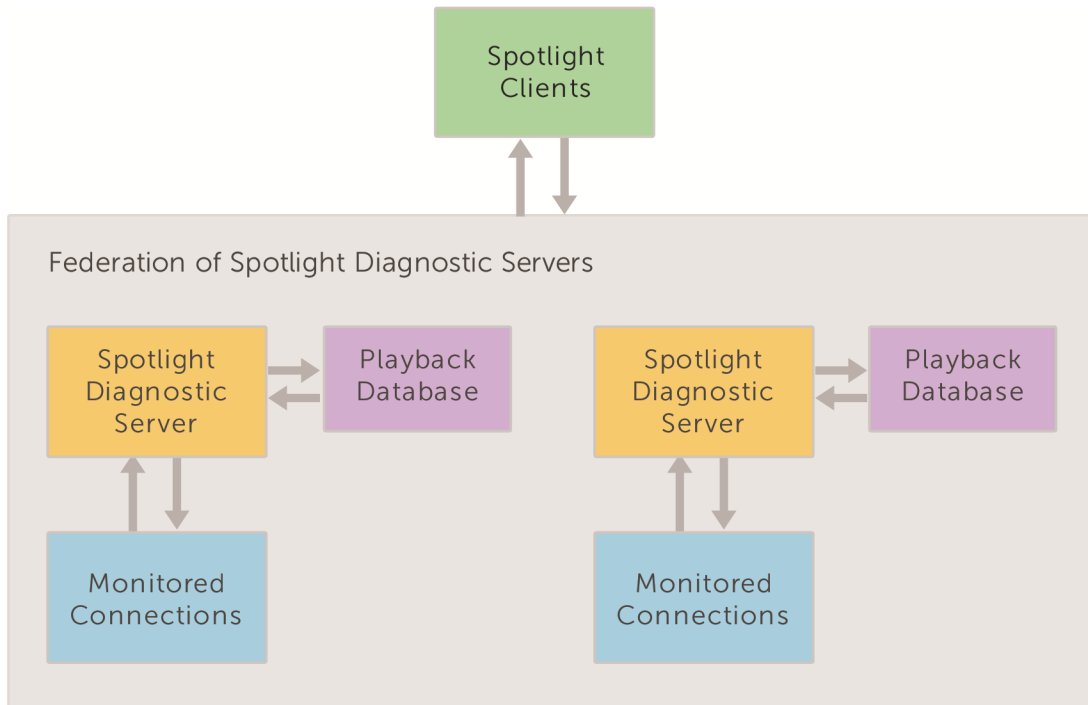
Connect a Spotlight Client to a federation

1. Click **Configure | Diagnostic Server**.
2. Click **Select a Diagnostic Server**
3. In the **Host** field type or select the machine name where the Spotlight Diagnostic Server is installed.



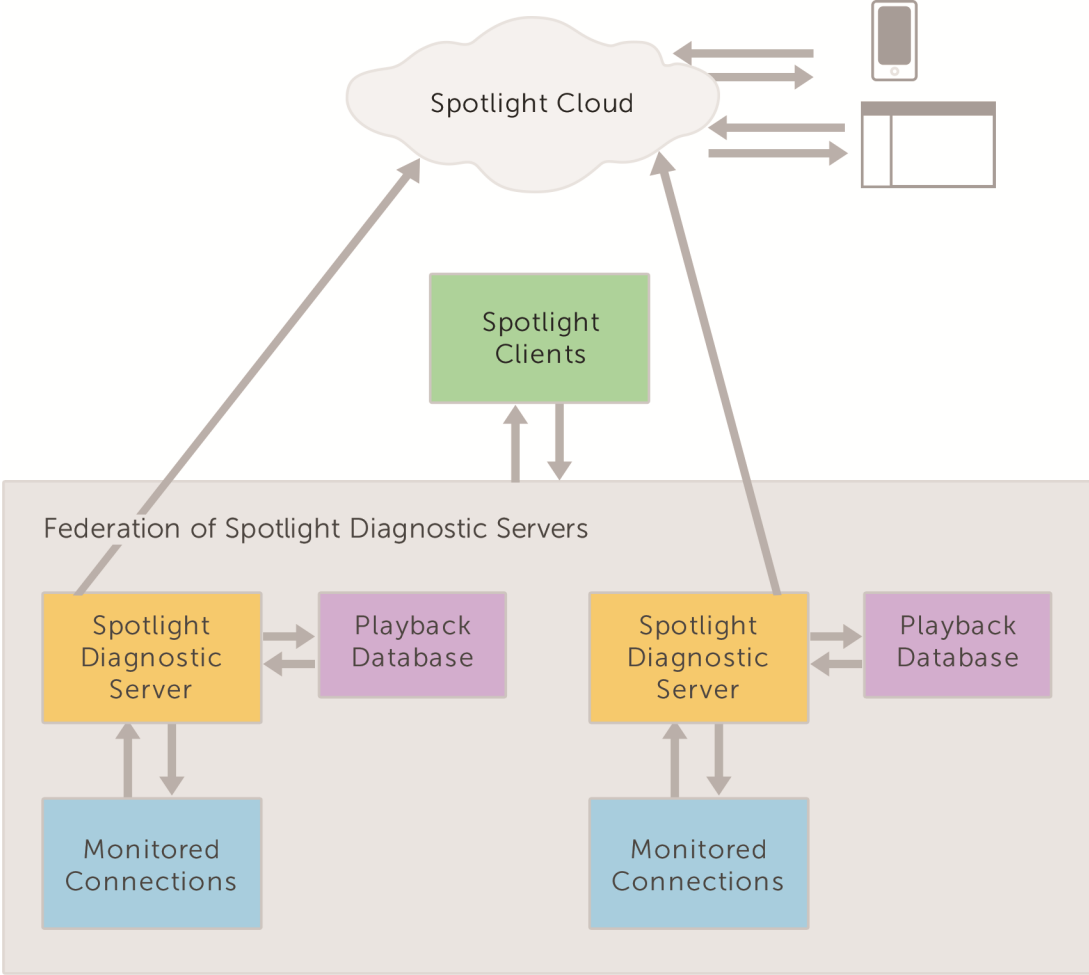
Federation and playback data

In a federation of Spotlight Diagnostic Servers, each Spotlight Diagnostic Server connects to its own Playback Database.



Federation and the Spotlight Cloud

In a federation of Spotlight Diagnostic Server each Spotlight Diagnostic Server is independently configured for Spotlight Cloud.



Remove (break apart) a federation

Steps to remove a Spotlight Diagnostic Server from the federation

1. Open a Spotlight Client in the federation.
2. From the Spotlight Client, click **Configure | Diagnostic Server | Federate Diagnostic Servers**.
3. Select the Spotlight Diagnostic Server to remove.
4. Click **Remove**.
5. Confirm your request to remove the Spotlight Diagnostic Server from the federation.

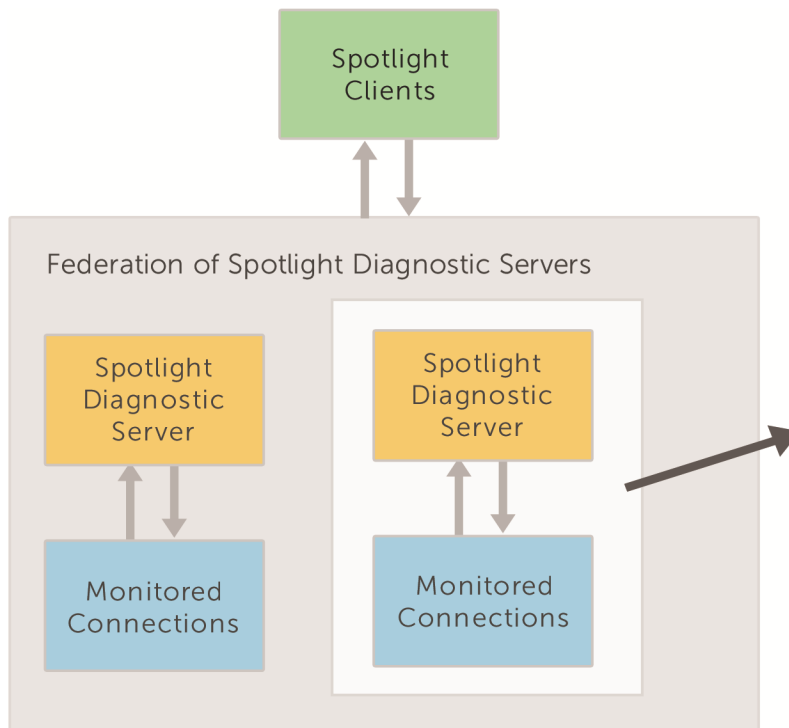


Table 2: The federation now the Spotlight Diagnostic Server has been removed

| Spotlight | Description |
|-------------------------|--|
| Monitored connections | Spotlight Clients connected to the federation can no longer monitor connections from the removed Spotlight Diagnostic Server. Spotlight Clients with the removed Spotlight Diagnostic Server as their primary server are no longer connected to the federation. |
| Custom views | The Custom Views in the federation no longer show monitored connections from the removed Spotlight Diagnostic Server. |
| Alarm Actions | All Alarm Actions with condition "Where the Diagnostic Server is..." the removed Spotlight Diagnostic Server are removed from the federation. |
| Planned Outages | Planned Outages for the federation no longer show monitored connections from the removed Spotlight Diagnostic Server. |
| Configuration templates | All Configuration templates remain available to the federation. |
| Spotlight license | The Spotlight license for the federation does not change. Note that if the Configuration server is removed from the federation the Spotlight license does change to the license of the federation's new Configuration server. |

Table 3: The Spotlight Diagnostic Server that was removed from the federation

| Spotlight | Description |
|-------------------------|--|
| Monitored connections | Spotlight Clients with the removed Spotlight Diagnostic Server as their primary server are no longer connected to the federation. They monitor connections directly from the Spotlight Diagnostic Server. |
| Custom views | Any Spotlight Client connecting to the Spotlight Diagnostic Server will have access to all Custom Views from the federation. The Custom Views show only connections monitored directly from the Spotlight Diagnostic Server. |
| Alarm Actions | Alarm Actions with condition "Where the Diagnostic Server is..." the removed Spotlight Diagnostic Server are available to the Spotlight Diagnostic Server when it is removed from the federation. Alarm Actions from the federation that do not have the condition "Where the Diagnostic Server is..." are also available to the Spotlight Diagnostic Server when it is removed from the federation. |
| Planned Outages | Any Spotlight Client connecting to the Spotlight Diagnostic Server will have access to all Planned Outages on connections monitored by that Spotlight Diagnostic Server. |
| Configuration templates | The configuration templates from the federation remain accessible to the Spotlight Diagnostic Server after it has been removed from the federation. |
| Spotlight license | The Spotlight Diagnostic Server takes on the Spotlight license that was given to it when it joined the federation; that is the Spotlight license applied to the Configuration server at the time the Spotlight Diagnostic Server joined the federation. |

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