LEOSTREAM™

DNS Setup Guide for Leostream

Remote Access and Desktop Connection Management for Hybrid Cloud VDI

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Connection Broker DNS Service Location (SRV)

Service Location records enable Leostream Connect and the Leostream Agent to automatically discover the address of the Connection Broker by querying the DNS server for the following SRV record:

`_connection_broker._tcp.`*`yourdomain.com`*`.`

where *`yourdomain.com`* is your domain.

If you cannot create a DNS SRV record, for example, if you do not have write permissions to your corporate DNS server, the Connection Broker allows you to specify a Connection Broker VIP. See "Setting Network Configuration and Connection Broker VIP" in the Connection Broker Administrator's Guide for information on using the Connection Broker VIP.

A correctly configured DNS server returns the IP address of one Connection Broker. If you have multiple Connection Brokers, create multiple `_connection_broker` SRV records.

The DNS server returns the weight and priority of each SRV record.

- **Weight:** Allocates connection requests between Connection Brokers in the same cluster. The default value of 100 indicates that the load is evenly spread between all Connection Brokers. Setting the weight higher indicates that a particular Connection Broker handles a greater percentage of requests.

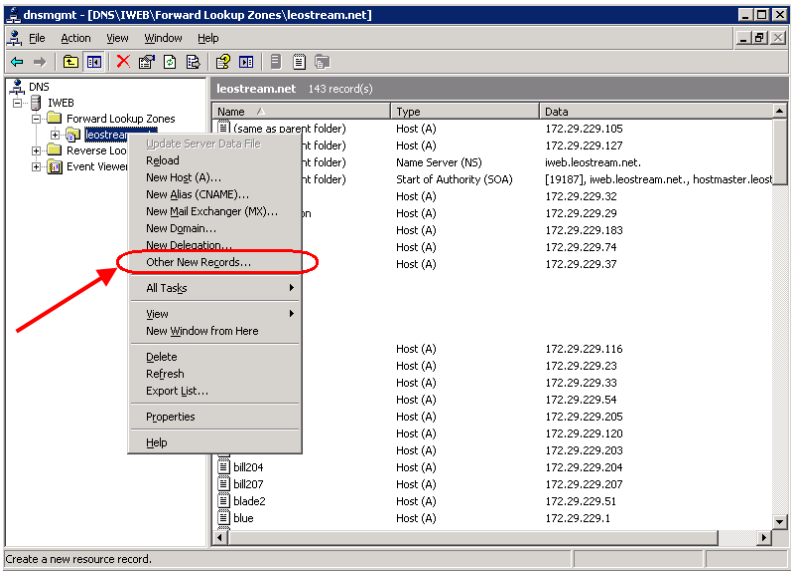
- **Priority:** Sets the order in which Connection Brokers are queried. A priority of zero means a Connection Broker (or a cluster of brokers that all have the same priority) would be selected first. A priority of 65535 is the lowest possible priority.

Use priority, in conjunction with dividing Connection Brokers up into geographic regions, to ensure that a user is normally connected to a cluster in their region, but, if this cluster is down, they are connected to the next closest region. To achieve this, it is necessary to setup **Sites** within DNS. A site corresponds to a geographic region, in this case.

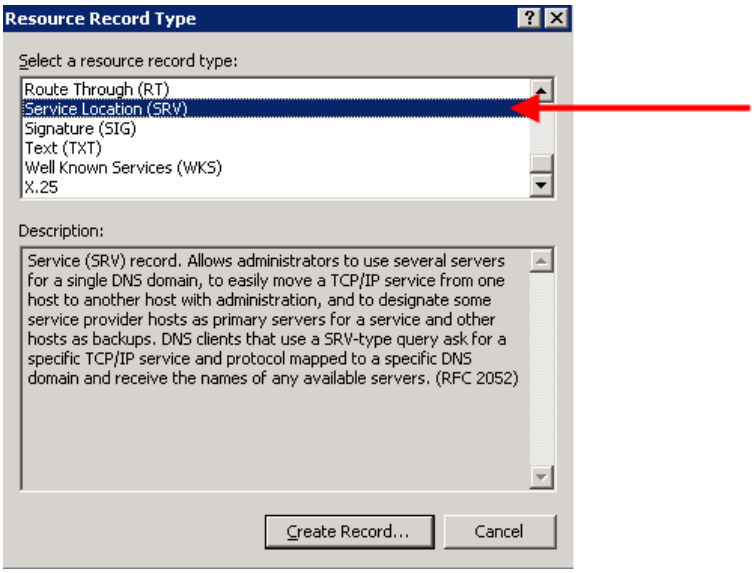
Manually register a Connection Broker with a Microsoft® DNS server, as follows:

1. Open the DNS console and click on the **Forward Lookup Zone.**

2. Right-click on your domain name in the list on the left-hand side of the window, and select **Other New Records** from the context menu, as shown in the following figure.



3. In the **Resource Record Type** dialog that appears**,** click on **Service Location**, as shown in the following figure.



4. Click **Create Record**. The **New Resource Record** dialog opens.

5. In the **New Resource Record** dialog, enter the following settings:

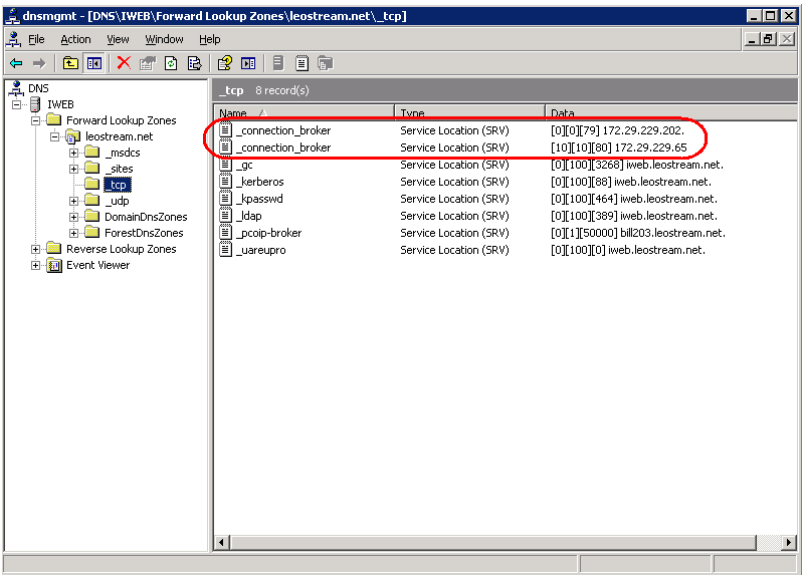
   - **Service:** _connection_broker
   - **Protocol:** _tcp
   - **Priority:** 100 (This is a temporary value)
   - **Weight:** 100 (This is a temporary value)
   - **Port Number:** 443
   - **Host offering this service:** *connectionbroker.domainname.com*

Where *connectionbroker.domainname.com* is your Connection Broker address.

6. Click **OK** to save the settings and return to the main DNS console window.

7. To configure additional Connection Broker SRV records, in the **Resource Record Type** dialog, click **Create Record** and repeat steps 5 and 6. Otherwise, in the **Resource Record Type** dialog, click **Done**.

To view your Connection Broker Service Location records, expand the domain name node in the DNS console and select the `_tcp` node, as shown in the following figure.



You can check for the DNS SRV records using `nslookup`. At the `nslookup` prompt, enter the following two commands:

```
set querytype=SRV

_connection_broker._tcp.domain.name
```

Where *domain.name* is your domain name.

If the record exists, `nslookup` returns the priority, weight, port, and SRV hostname. Otherwise, it returns a message indicating the record is not found.

You can use DNS A records instead of DNS SRV records. However, Leostream Agents and Leostream Connect clients do not automatically discover the Connection Broker address in a DNS A record. If using DNS A records, you must manually configure the Connection Broker address in every Leostream Agent and Leostream Connect client. In addition, to have the Connection Broker send the name in the A record instead of the Connection Broker IP address, you must enter the A record name into the **Connection Broker VIP** field.

Using DNS for Connection Broker Failover

If you have multiple Connection Brokers in a cluster, you can create individual DNS SRV records for each Connection Broker.

All Leostream Agents and Leostream Connect clients that obtain the Connection Broker address automatically perform a DNS lookup when they start. If the lookup retrieves multiple DNS SRV records, the component attempts to contact the Connection Broker on the first address selected. If that connection fails, the component automatically tries another address returned by the lookup.

After picking a Connection Broker address, the component continues to use the selected address until the DNS SRV record's TTL expires. At that point, the component performs another DNS SRV lookup. You can set a short TTL to force more frequent DNS SRV lookups, to ensure connectivity.

Using DNS for Load Balancing

Your DNS server provides an inexpensive method for distributing user connections between Connection Brokers in a cluster and can allow you to meet your system capacity requirements. Using DNS, you can *regionalize* your Connection Broker, i.e., when a user logs into the Broker, they have access to the local DNS name server and, hence, the local Connection Broker. You can override this regional behavior, i.e., send your users to their home Connection Broker, using the Connection Broker's user redirection feature.

To use DNS for software-based load balancing, create multiple DNS A records for your Connection Broker. Then, point your Connection Broker DNS SRV record to the named record, for example:

```
_connection_broker = cb.yourCompany.com
```

When a user signs in, DNS uses a simple round robin scheme to determine which Connection Broker to send the user to.

 A simple DNS system cannot detect failure of a single Connection Broker host, and continues to hand that Connection Broker address to users. A user directed to a failed Connection Broker address must wait until the connection times out before another Connection Broker address is tried. Therefore, using DNS for load balancing is suitable only for systems that can stand a moderate amount of delay during failover.

To satisfy your availability requirements, look for a vendor-enhanced DNS system or switch to a hardware-based load balancer.

Using DNS for PCoIP Remote Workstation Card Discovery

When the PCoIP Remote Workstation Card is running firmware version 4.9, it can automatically discover the location of the Connection Broker through your network's DNS server. When a PCoIP Remote Workstation Card starts, it queries your DNS server for an SRV record that points to the Connection Broker.

When setting up the `_pcoip-broker` record, ensure that you point to an A record for your Connection Broker, not to the Connection Broker IP address, and that the record uses port 50000.

When you add a new PCoIP Remote Workstation Card to your network, the card contacts the Connection Broker specified in the DNS SRV record. The Connection Broker then adds the card to the **> Resources > PCoIP Host Devices** page.

 If new Remote Workstation Cards are not appearing in your Connection Broker, ensure that your Connection Broker accepts communications using TLS version 1.0 and reboot your Connection Broker to ensure that port 50,000 is open.

You can check for the DNS SRV records using `nslookup`. After you start `nslookup`, enter the following commands at the `nslookup` prompt:

```
set querytype=SRV
_pcoip-broker._tcp.domain.name
```

Where *`domain.name`* is your domain name

If the record exists, `nslookup` returns the priority, weight, port, and SRV hostname. Otherwise, it returns a message indicating the record is not found.

Switching User Sessions between Connection Brokers

When a user logs in to Leostream, the user's session information is stored in the Connection Broker that processes the user's login. If the DNS record's TTL expires during the user's session, the client device may try to direct the user to a different Connection Broker in the cluster, for example, when the user refreshes their list of offered desktops.

If the client switches to a new Connection Broker, the new Connection Broker queries the original Connection Broker for the user's session information and their session continues uninterrupted on the new Connection Broker. If the new Connection Broker cannot contact the original Connection Broker to retrieve the user's session information, the Connection Broker expires the user's session and they must log back into Leostream.