



# Broker and Concentrator Configuration Guide

for Version 11.0





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October 2017

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## Broker and Concentrator Basics

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Concentrators and Brokers aggregate data captured or aggregated by other services unlike Decoders, which capture data,

NetWitness Suite supports the Broker and Concentrator services:

- Brokers - aggregate data across entire infrastructure from configured Concentrators. You can have multiple concentrators aggregating into one broker. You can also have multiple brokers aggregating into a single broker.
- Concentrators - aggregates and analyzes data across multiple capture locations from Decoders. Indexes and directs queries.

You can configure various Brokers and Concentrators together under a Broker. Brokers are able to pull in data quickly from the Concentrators because they acquire index information only. This configuration is done using the NetWitness Suite user interface. Most of the configuration is performed in the Administration Services view (Admin > Services).

You can also configure the aggregate services and perform the whole aggregation process using the Services view. This helps setup Aggregation autostart, Timing and performance parameters, maximum number of open meta and session files. In addition to this, you can also time the attempts to restart, reconnect, or take offline a non-responsive aggregate service. Configuring Aggregate services includes managing Concentrators and Decoders as aggregate services. You can also limit the data being consumed from an aggregate service using meta fields and filters. The aggregation tasks are performed in the General tab of Administration Services view (Admin > Services)

### Step 1. Verify Service System Configuration

When a service is first added to NetWitness Suite, default values for the system configuration parameters are in effect. You can edit these values to tune performance.

In most cases, the default values for compression, statistics update interval, and number of threads in the thread pool are set at a good point for optimal system performance.

#### To edit system configuration parameters for a Broker or Concentrator:

1. In the **main menu**, select **ADMIN > Services**.
2. In the **Services** view, select a Broker or Concentrator, and in the Actions column, select **> View > Config**.

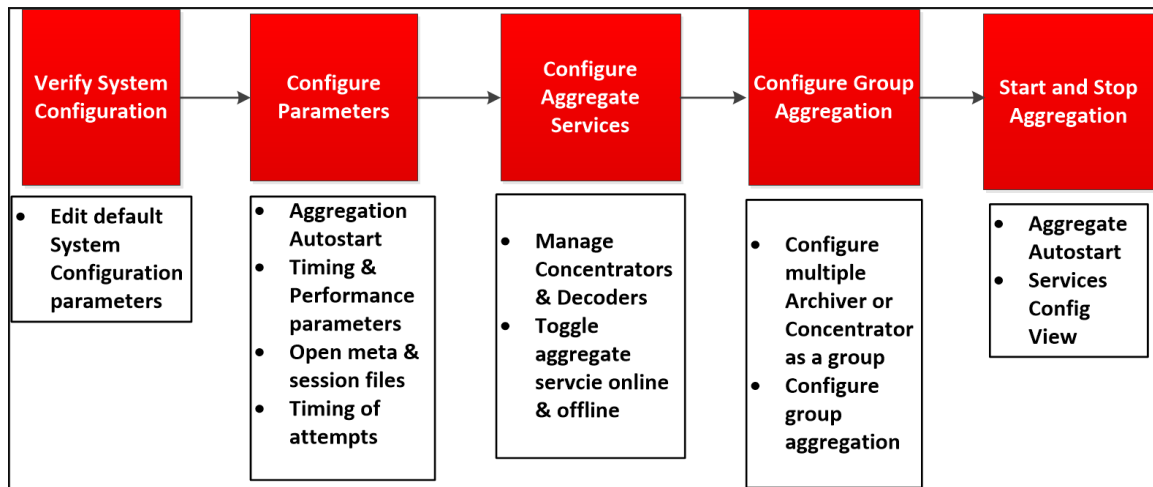
The Services Config view for the selected service is displayed.

3. Under System Configuration, click a field that you want to edit, and type a new value.
4. When finished editing, click Apply.

## Broker and Concentrator Configuration

Setting up a Broker or Concentrator involves configuring the basic system parameters, the aggregate services, and the aggregation process between a Broker or Concentrator and the aggregate services.

These are the required configuration steps for a new Broker or Concentrator, and also for changing the configuration of an existing Broker. Perform the steps in the section in the sequence they are given.



## Basic Configuration Checklist

The following checklist provides the sequence for tasks that are required to configure a Broker or Concentrator that has been added to NetWitness Suite in accordance with the *Hosts and Services Guide*.

Configuration Step	Description
Step 1 - Verify System Configuration	Verify system configuration default values for the host and service are appropriate as described in <a href="#">Step 1. Verify Service System Configuration</a>
Step 2 - Configure Parameters	Configure parameters that govern the overall aggregation process as described in <a href="#">Step 2. Configure the Aggregation Process</a>

Configuration Step	Description
Step 3 - Configure Aggregate Services	Configure aggregate services as described in <a href="#">Step 3. Configure Aggregate Services</a>
Step 4 - Configure Group Aggregation	(Optional) Configure group aggregation as described in <a href="#">Step 4. (Optional) Configuring Group Aggregation</a>
Step 5 - Start and Stop Aggregation	Start and stop aggregation as described in <a href="#">Step 5. Start and Stop Aggregation</a>

## Step 1. Verify Service System Configuration

When a service is first added to NetWitness Suite, default values for the system configuration parameters are in effect. You can edit these values to tune performance.

In most cases, the default values for compression, statistics update interval, and number of threads in the thread pool are set at a good point for optimal system performance.

### To edit system configuration parameters for a Broker or Concentrator:

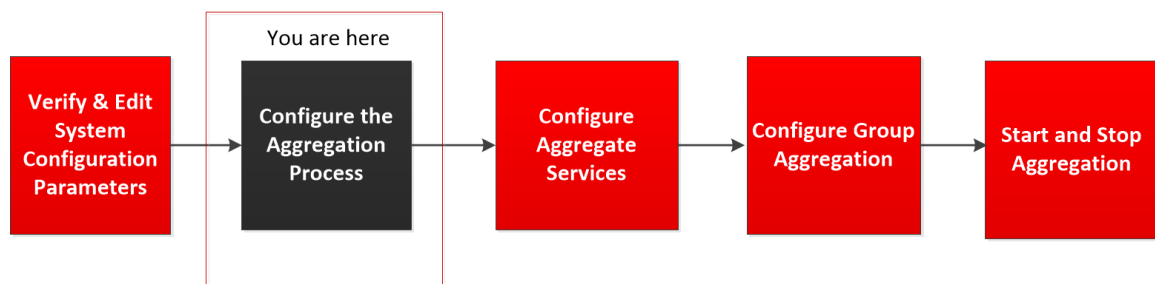
1. In the **main menu**, select ADMIN > **Services**.
2. In the **Services** view, select a Broker or Concentrator, and in the Actions column, select > **View** > **Config**.  
The Services Config view for the selected service is displayed.
3. Under System Configuration, click a field that you want to edit, and type a new value.
4. When finished editing, click Apply.





## Step 2. Configure the Aggregation Process

Configuring the aggregation process for a Broker or Concentrator includes setting:

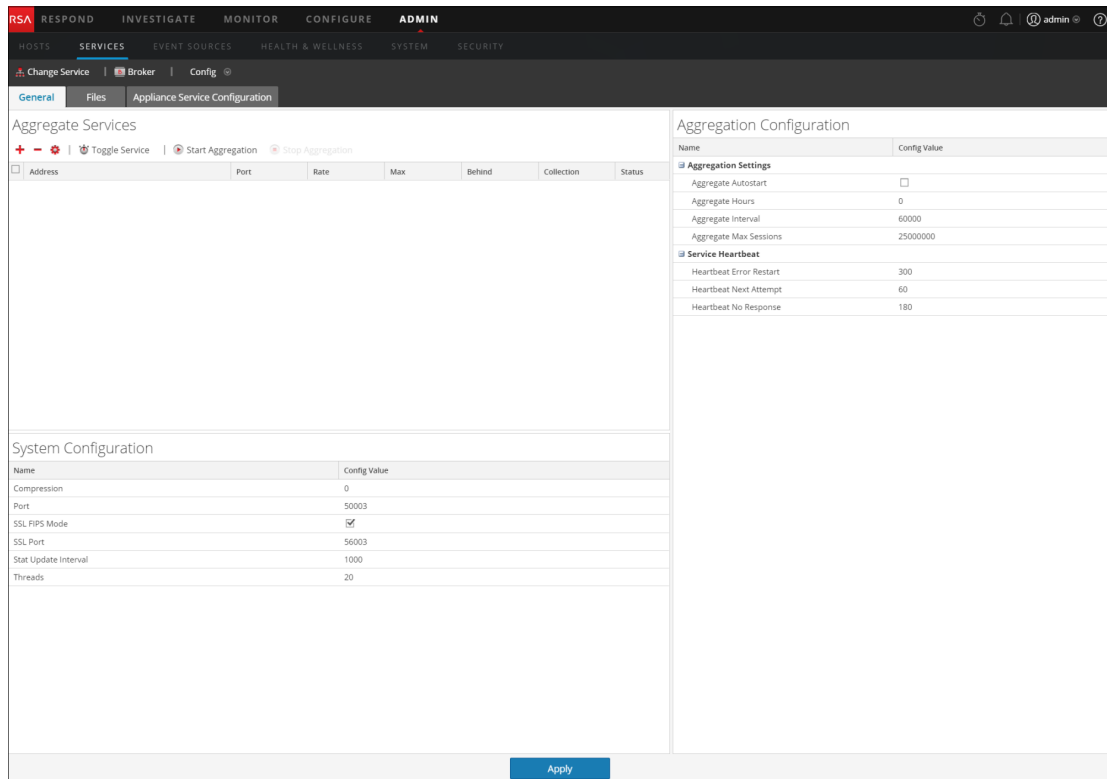
- Aggregation autostart
- Timing and performance parameters, such as the number of sessions per round of aggregation and time between rounds
- Maximum number of open meta and session files
- The timing of attempts to restart, reconnect, or take offline a non-responsive aggregate service



### To configure the aggregation process on a Broker or Concentrator:

1. In the **main menu**, select **ADMIN > Services**.
2. In the **Services** view, select a Broker or Concentrator, and select   > **View > Config**.  
The Services Config view, which includes the Aggregation Configuration section, is

displayed.



3. (Optional) Select **Aggregate Autostart** to enable automatic start of aggregation when a service is online.

Aggregation Configuration	
Name	Config Value
<b>Aggregation Settings</b>	
<b>Aggregate Autostart</b>	<input checked="" type="checkbox"/>
Aggregate Hours	0
Aggregate Interval	60000
Aggregate Max Sessions	25000000
<b>Service Heartbeat</b>	
Heartbeat Error Restart	300
Heartbeat Next Attempt	60
Heartbeat No Response	180

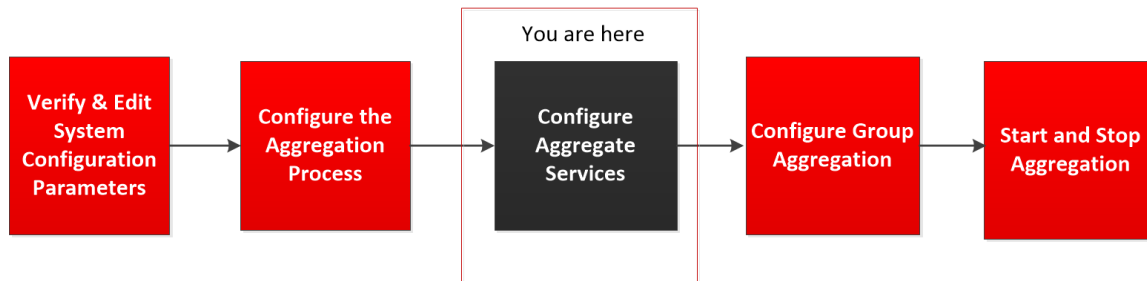
4. (Optional) Edit any of the aggregation settings: the hours back to begin aggregation, the milliseconds between rounds of aggregation, and maximum number of sessions per aggregation round.
5. (Optional) Edit any of the Service Heartbeat settings, which specify the timing of the first attempt to reconnect to a service after an error, the next attempt to reconnect, and taking the service offline after failure to reconnect.
6. When finished editing the settings, click **Apply**.  
The settings become effective immediately

## Step 3. Configure Aggregate Services


This topic introduces basic tasks related to data aggregation on Brokers and Concentrators. For information on the optional setup of group aggregation, see [Step 4. \(Optional\) Configuring Group Aggregation](#).

Configuring the aggregate services (whose data is consumed and aggregated) includes:

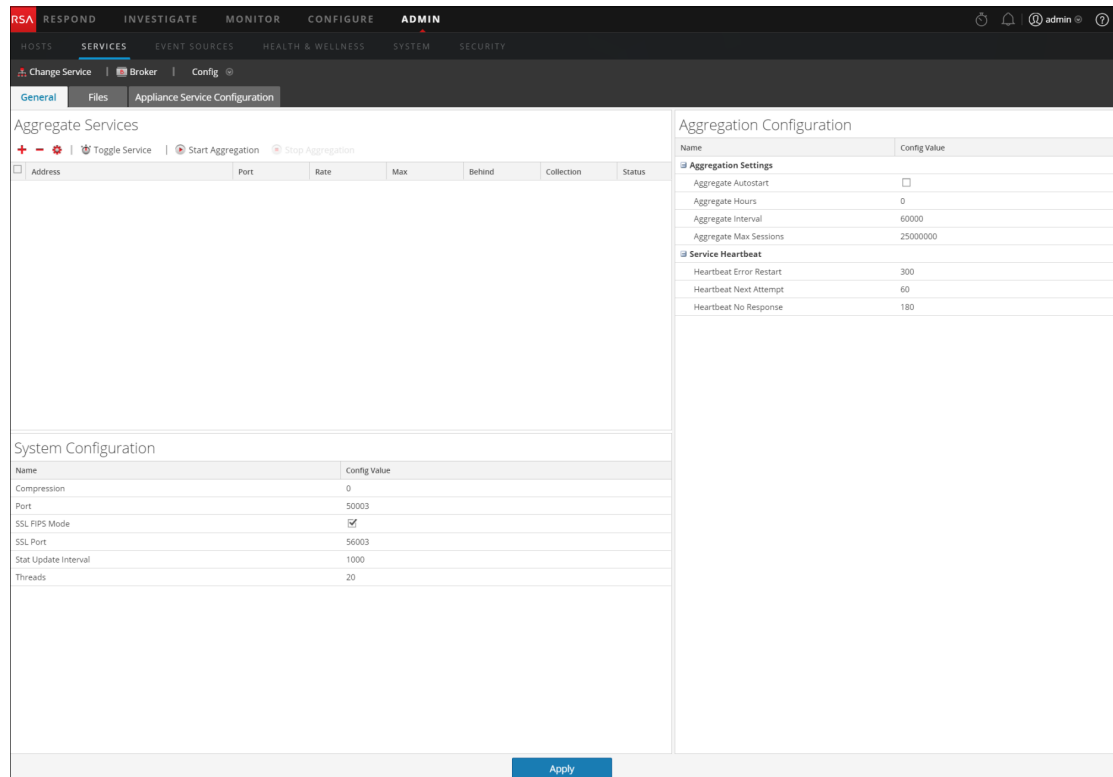
- Adding, editing, and deleting Concentrators and Decoders as aggregate services
- Toggling an aggregate service online and offline



### Add Aggregate Services to a Broker or Concentrator

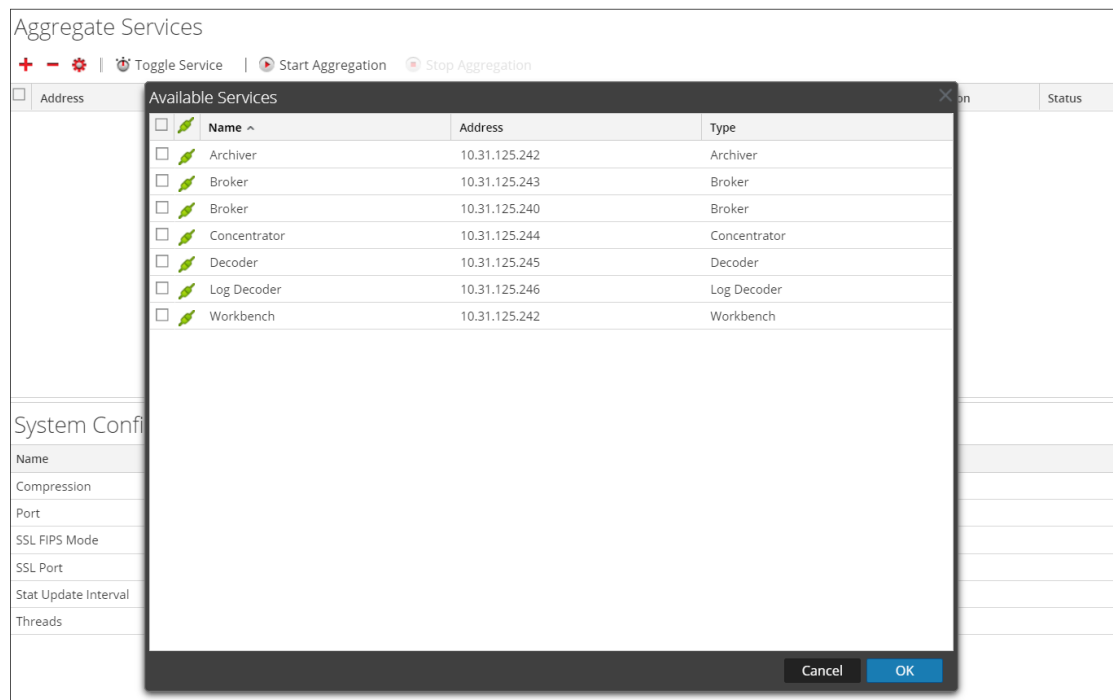
1. In the **main menu** menu, select **ADMIN > Services**.
2. In the **ADMIN Services** view, select a Broker or Concentrator, and select  > **View > Config**.

The Services Config view for the selected service is displayed.

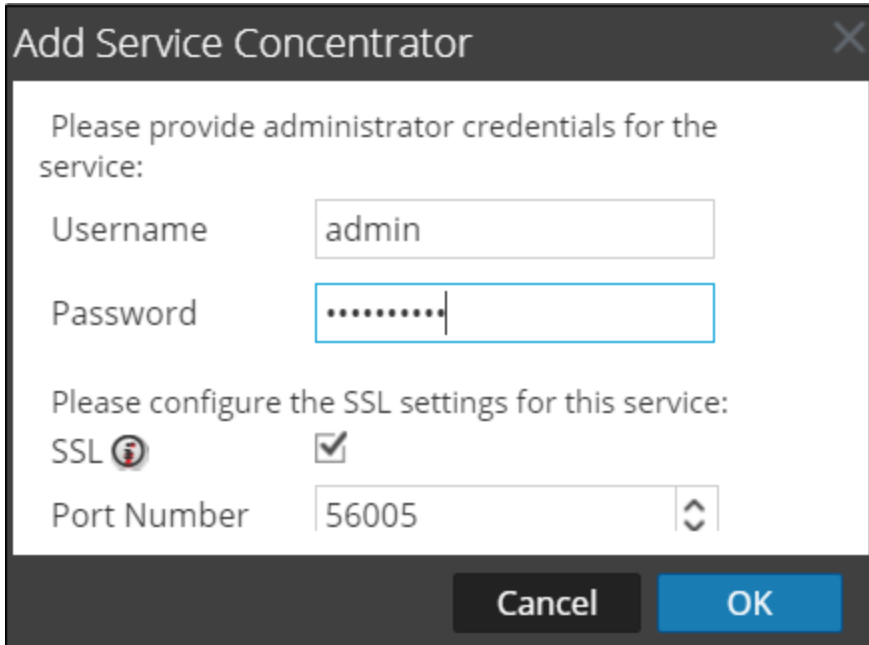


- Click **+** in the **Aggregate Services** toolbar.

The Available Services dialog is displayed.



4. Select one or more services to be added and click **OK**.
5. Enter the Administrator username and password to authenticate adding a service.




**Add Service Concentrator**

Please provide administrator credentials for the service:

Username:

Password:

Please configure the SSL settings for this service:

SSL  ☒

Port Number:

**Cancel** **OK**

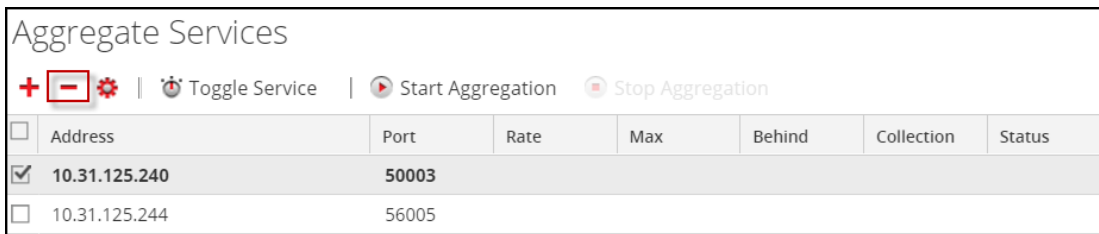
The added services are listed in the Aggregate Services list.

6. To save the changes, click **Apply**.







## Remove Aggregate Services from a Broker or Concentrator

**Note:** This option applies only to offline services. If the aggregate service is online, you must first toggle the service offline.

1. In the **Aggregate Services** list, select one or more services.
2. Click  in the toolbar.



**Aggregate Services**




 | 
  Toggle Service
 | 
  Start Aggregation
  Stop Aggregation

<input type="checkbox"/>	Address	Port	Rate	Max	Behind	Collection	Status
<input checked="" type="checkbox"/>	10.31.125.240	50003					
<input type="checkbox"/>	10.31.125.244	56005					


The service is removed from Aggregate Services list.

3. To save the change, click **Apply**.

## Edit Aggregate Services on a Concentrator

**Note:** This option applies only to offline services. If the aggregate service is online, you must first toggle the service offline. You can edit only one service at a time.

You can limit the data being consumed from an aggregate service using meta fields and filters. To configure this:

1. Click **Change Service** to change the service to Concentrator.
2. In the **Aggregate Services** list, select one or more services.
3. Click  in the toolbar. Enter the authentication information in the pop up dialog box.
  - If the service was added on a different instance of NetWitness Suite, you must add it to this instance of NetWitness Suite in order to edit. A warning dialog allows you to add the service. If you click **Yes**, the Add Service dialog is displayed.
  - If the service is online, a dialog notifies that the service must be offline and requests confirmation that you want to continue. If you click **Yes**, NetWitness Suite takes the service offline and the Edit Aggregate Service dialog is displayed.
  - If the service is offline, the Edit Aggregate Service dialog is displayed with the editable properties for an aggregate service on a Concentrator.
4. Click a type of metadata in the **Meta Include** tab to select the type of metadata for the Concentrator to consume from this service. Click **Save**.

**Edit Aggregate Service**

☒ Group Aggregation

**Meta Filter** | **Meta Include**

Search

☐ Meta ^

☒ OS

☒ access.point

☐ action

☐ ad.computer.dst

☐ ad.computer.src

☐ ad.domain.dst

☐ ad.domain.src

☐ ad.username.dst

☐ ad.username.src

Filter

**Reset** **Cancel** **Save**


5. To specify a rule to filter data that the Concentrator consumes from this service, compose a rule in the **Meta Filter** tab. Click **Save**.
6. Click **Close**.

The Edit Aggregate Service dialog closes and the changes are shown in the Aggregate Services list. In this example, two meta were selected on the Meta Include tab. When you click the information icon in the Meta Include field, it shows the selections.
7. To save the changes, click **Apply**.



## Toggle a Service

When data aggregation starts, Brokers and Concentrators consume data from aggregate services that are online. When first added to a Broker or Concentrator, aggregate services are offline. To toggle a service between online and offline:

1. Select a service in the **Aggregate Services** list.
2. Click  **Toggle Service** .

The status is changed.

## Step 4. (Optional) Configuring Group Aggregation

You use Group Aggregation to configure multiple Archiver or Concentrator services as a group and share the aggregation tasks between them. You can configure multiple Archiver services or Concentrator services to efficiently aggregate from multiple Log Decoder services to improve query performance on the data:

- Stored in the Archiver.
- Processed through the Concentrator.

## RSA Group Aggregation Deployment Recommendations

RSA recommends the following deployment for Group Aggregation.

- 1 - 2 Log Decoders
- 3 - 5 Archivers or Concentrators

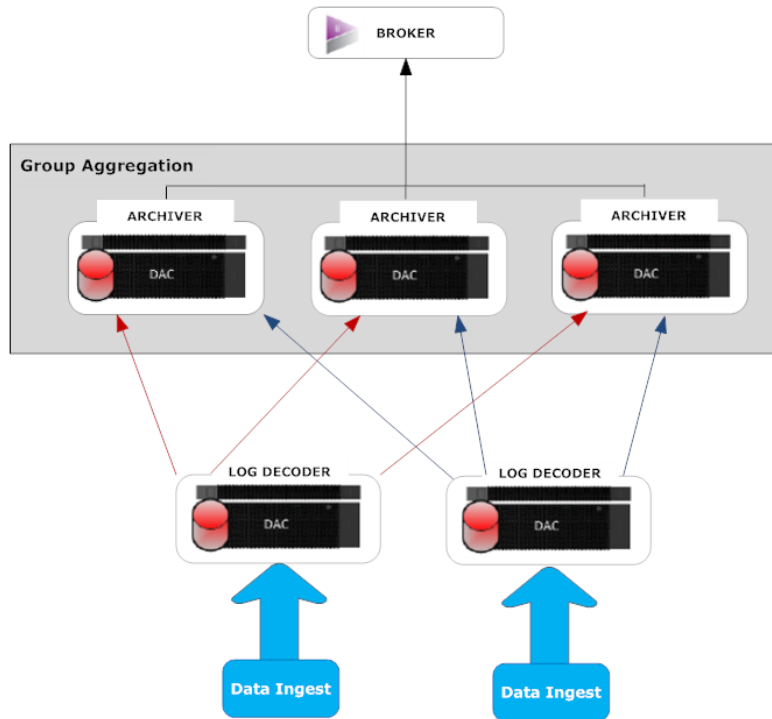
## Advantages of Using Group Aggregation

Group Aggregation:

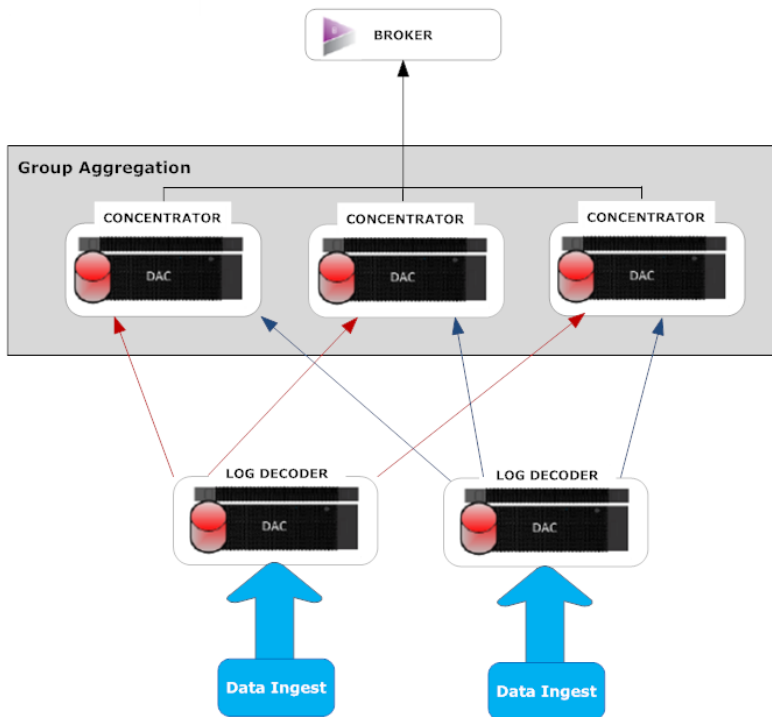
- Increases the speed of Security Analytics queries.
- Improves the performance of aggregate queries (Count and Sum) on the environment.
- Enhances investigation service performance.
- Gives you the option of storing data for a longer duration for investigation purposes.

The following diagram illustrates Group Aggregation.

### Archivers



### Concentrators



You can have any number of Archivers or Concentrators grouped together and form an aggregation group. The Archiver or Concentrator services in the group divide all the aggregated session between them based on the number of sessions defined in the Aggregate Max Sessions parameter.

For example, in an aggregation group containing two Archiver services or two Concentrator services with the Aggregate Max Sessions parameter set to 10000 the services would divide the session between themselves as illustrated in the following table.

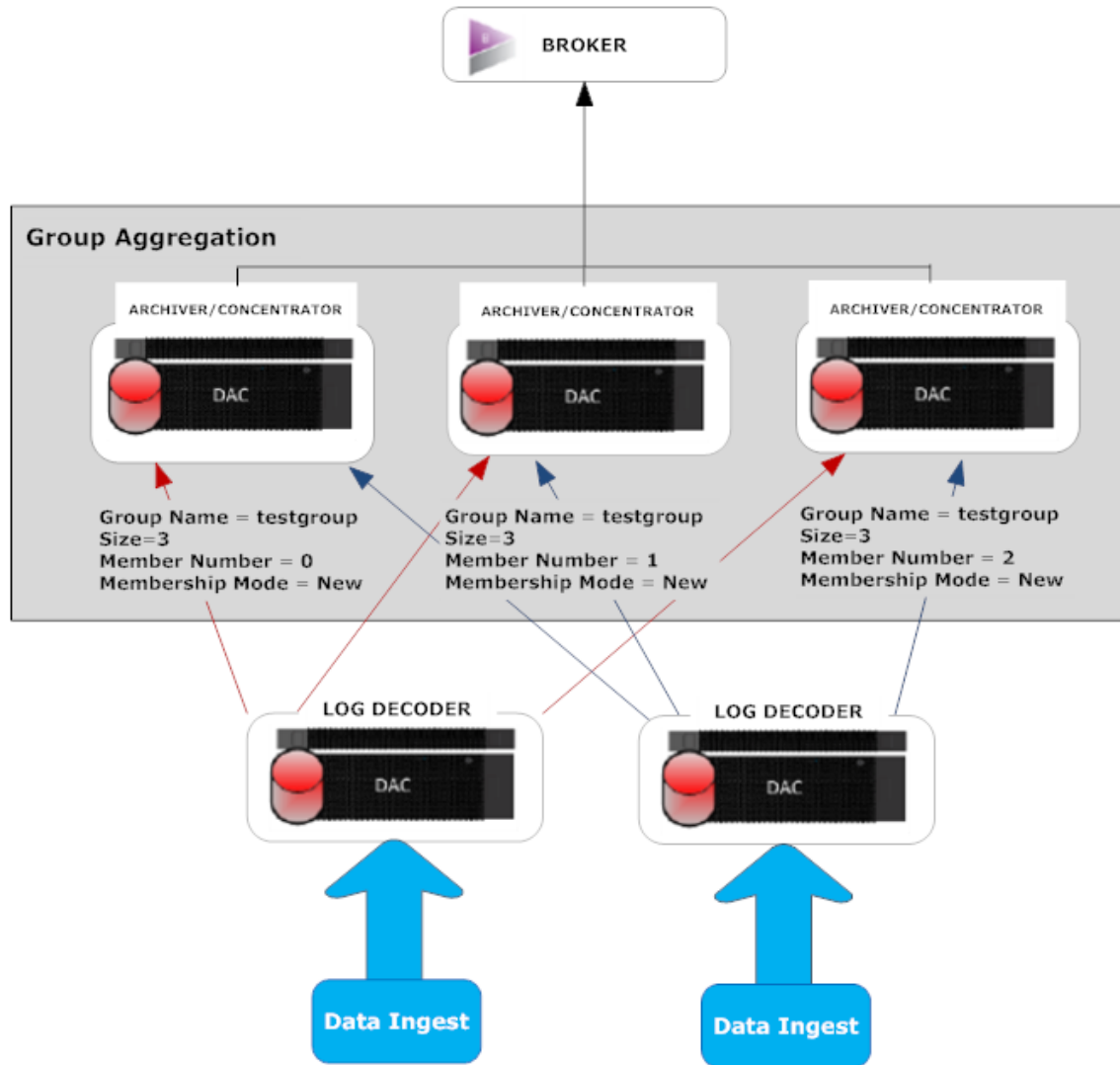
Archiver 0 or Concentrator 0	Archiver 1 or Concentrator 1
1 - 9,999	10,000 - 19,999
20,000 - 29,999	30,000 - 39,999
40,000 - 49,999	50,000 - 59,999

## Configure Group Aggregation

Complete this procedure to configure multiple Archiver or Concentrator services as a group and share the aggregation tasks between them.

### Prerequisites

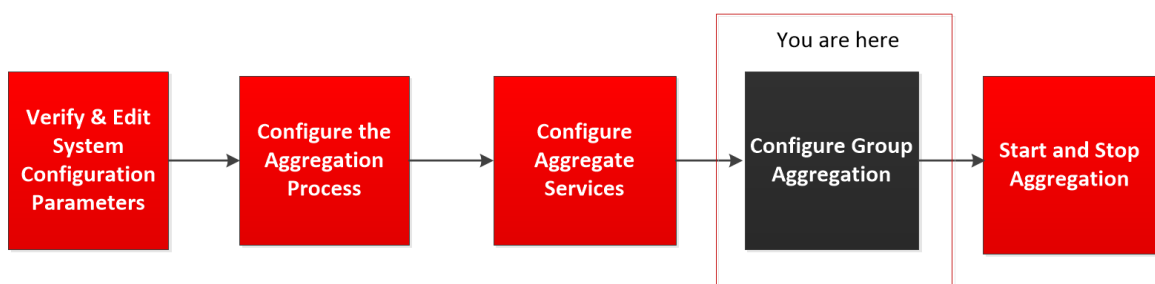
Plan the network design for group aggregation. The following figure is an example of a group aggregation setup.



Ensure that you understand the Group aggregation parameters in the following table, and create a group aggregation plan.

Parameter	Description
Group Name	It determines the group to which the Archiver or Concentrator belongs. You can add any number of groups aggregating data from a Log Decoder. The Group Name parameter is used by the Log Decoder to identify which Archiver or Concentrator services are working together. All Archiver or Concentrators services in the group should have the same group name.

Size	It determines the number of Archiver or Concentrator services in the aggregation group.
Member Number	It determines the position of the Archiver or Concentrator in the aggregation group. For a group of size N, member number from 0 to N-1 must be set on each of the Archiver or Concentrators services in the aggregation group.  For example: If the size of the aggregation group is 2, the member number of one of the Archiver or Concentrator service should be set to 0 and the member number of the other Archiver or Concentrator should be set to 1.
Membership Mode	<p>There are two membership modes: New and Replace.</p> <p>New: Adding a new Archiver or Concentrator service as a member to the existing aggregation group or creating an aggregation group. The Archiver or Concentrator service does not aggregate any existing sessions from the service as other members of the group would have already aggregated all the sessions on the service. This Archiver or Concentrator service will only aggregate new sessions as they appear on the service.</p> <p>Replace: Replacing an existing aggregation group member. The Archiver or Concentrator will begin aggregation from the oldest session available on the service it is aggregating from.</p> <div style="border: 1px solid green; padding: 5px; margin-top: 10px;"> <p><b>Note:</b> This parameter has an effect only when no sessions have been aggregated from the service. After some sessions are aggregated, this parameter has no effect.</p> </div>



## Set up Group Aggregation



Complete the following procedure to set up group aggregation.

1. Configure multiple Archiver or Concentrator services in your environment. Make sure that you add the same Log Decoder as data source to all the services.
2. Perform the following on all the Archiver or Concentrator services that you want to be part

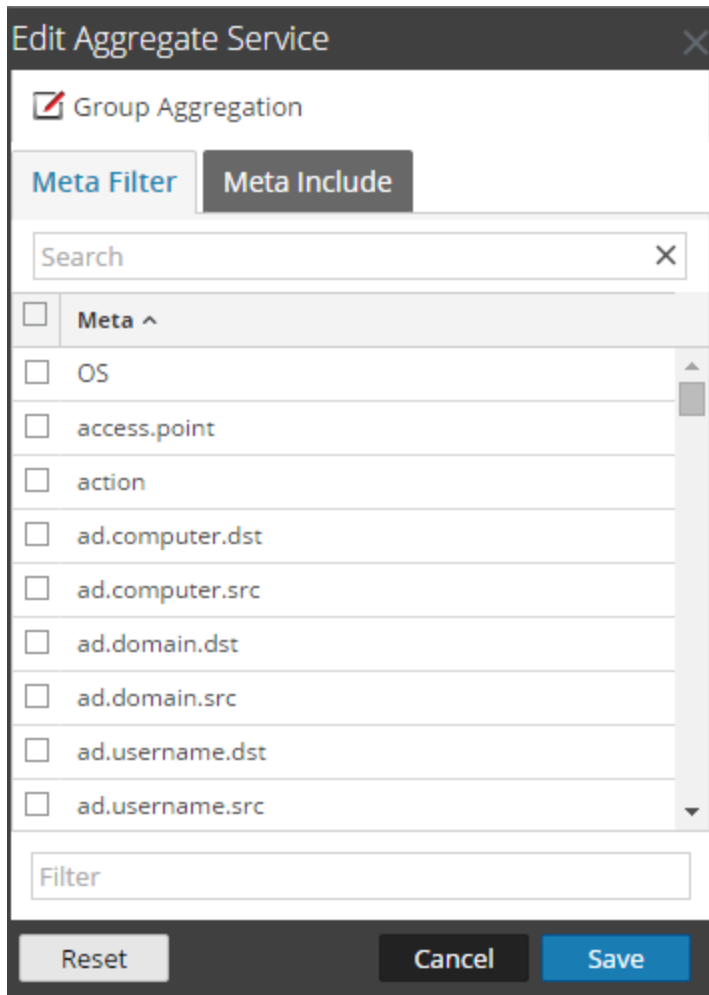
of aggregation group:

- a. In the **main menu**, select **ADMIN > Services**.
- b. Select the Archiver or Concentrator service, and in the **Actions** column, select **View > Config**.

The Device Config view of the Archiver or Concentrator is displayed.

- c. Under **Aggregate Services** section, select the Log Decoder device.
- d. Click  **Toggle Service** to change the status of the Log Decoder to offline if it is online.
- e. Click .

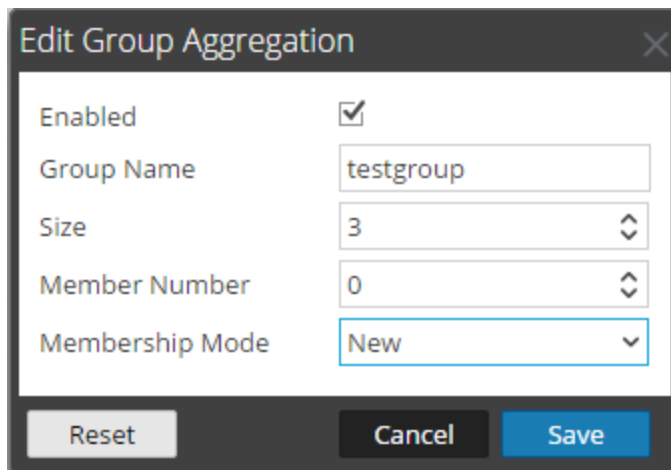
The **Edit Aggregate Service** dialog is displayed.



The **Edit Aggregate Service** dialog box is shown. It has a title bar with a close button. Inside, there is a checked checkbox for **Group Aggregation**. Below this are two tabs: **Meta Filter** (selected) and **Meta Include**. A search bar with a clear button is present. A list of items follows, each with an unchecked checkbox: **Meta ^**, **OS**, **access.point**, **action**, **ad.computer.dst**, **ad.computer.src**, **ad.domain.dst**, **ad.domain.src**, **ad.username.dst**, and **ad.username.src**. A **Filter** input field is at the bottom. At the very bottom are three buttons: **Reset**, **Cancel**, and **Save**.

- f. Click .

The **Edit Group Aggregation** dialog is displayed.



Enabled	<input checked="" type="checkbox"/>
Group Name	testgroup
Size	3
Member Number	0
Membership Mode	New

Reset Cancel Save

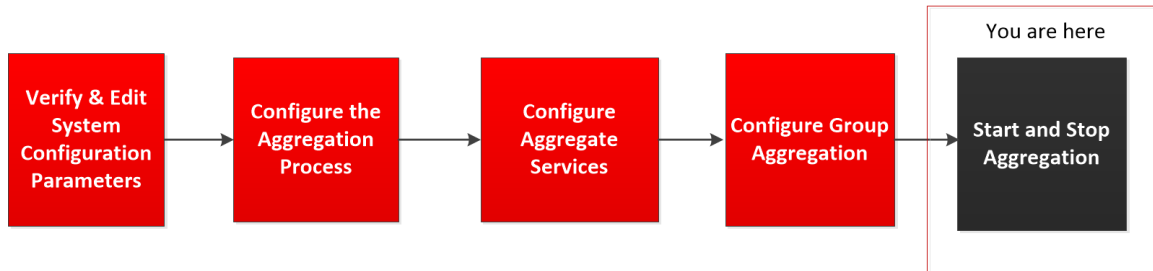
- g. Select the **Enabled** checkbox and set the following parameters:
    - In the **Group Name** field, type the group name.
    - In the **Size** field, select the number of Archiver or Concentrator services in the aggregation group.
    - In the **Member Number** field, select the position of the Archiver or Concentrator in the aggregation group.
    - In the **Membership Mode** drop-down menu, select the mode.
  - h. Click **Save**.
  - i. In the Device Config View page, click **Apply**.
  - j. Perform **Step b** to **Step i** on all other Archiver or Concentrator services that need to be part of group aggregation.
3. In the **Aggregation Configuration** section, set the **Aggregate Max Sessions** parameter set to **10000**.






## Step 5. Start and Stop Aggregation

When a Broker or Concentrator starts up, it automatically begins aggregating data if Aggregate Autostart is enabled. When autostart is not enabled, you can start and stop data aggregation manually.



**Note:** The Aggregate Configuration Settings in the [Services Config View](#) for a Broker or Concentrator determine whether Aggregate Autostart is enabled, as well as the size of a round of aggregation and time between rounds.

## Start and Stop Data Aggregation in the Services System View

1. In the **main menu**, select **ADMIN > Services**.
2. In the **ADMIN Services** view, select a Broker or Concentrator, and select  > **View > System**.

**Broker Service Information**

Name	NWAPPLIANCE2943 (Broker)
Version	11.0.0.0 (Rev null)
Memory Usage	26564 KB (0.08% of 32176 MB)
CPU	0%
Running Since	2017-Jul-19 05:13:52
Uptime	5 hours 57 minutes 14 seconds
Current Time	2017-Jul-19 11:11:06

**Broker User Information**

Name	admin
Groups	Administrators
Roles	aggregate, concentrator.manage, connections.manage, index.manage, logs.manage, sdk.content, sdk.manage, sdk.meta, sdk.packets, services.manage, storedproc.execute, storedproc.manage, sys.manage, users.manage

**License Information**

Service ID	95b6383b-76a8-4716-a3a7-20682b99ed14
Product	smcBroker
Type	Permanent
Start Date	2016-01-28 00:00:00

**Appliance Service Information**

Name	NWAPPLIANCE2943 (Host)
Version	11.0.0.0 (Rev null)
Memory Usage	23440 KB (0.07% of 32176 MB)
CPU	0%
Running Since	2017-Jul-19 05:13:52
Uptime	5 hours 57 minutes 14 seconds
Current Time	2017-Jul-19 11:11:06

**Host User Information**

Name	admin
Groups	Administrators
Roles	appliance.manage, connections.manage, logs.manage, services.manage, storedproc.execute, storedproc.manage, sys.manage, users.manage

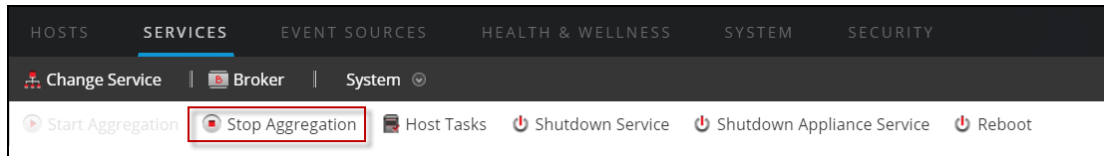
**Session Information**

Session	User	IP Address	Login Time	Active Queries

**Footer:** RSA | NETWITNESS SUITE 11.0.0.0 17070905430.1.012748d

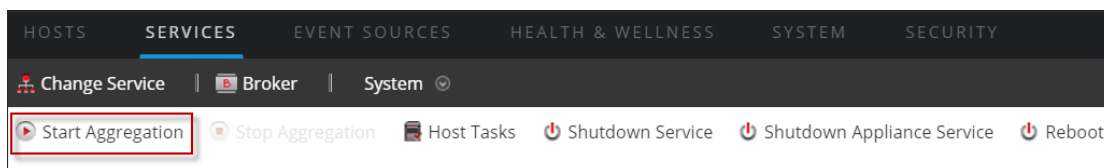
- To stop a Broker or Concentrator that is capturing data, click **Stop Aggregation** in the toolbar.

The service stops aggregating data and the **Stop Aggregation** option in the toolbar is unavailable. The **Start Aggregation** option becomes active.



- If you want the service to start aggregating data again, click **Start Aggregation**.

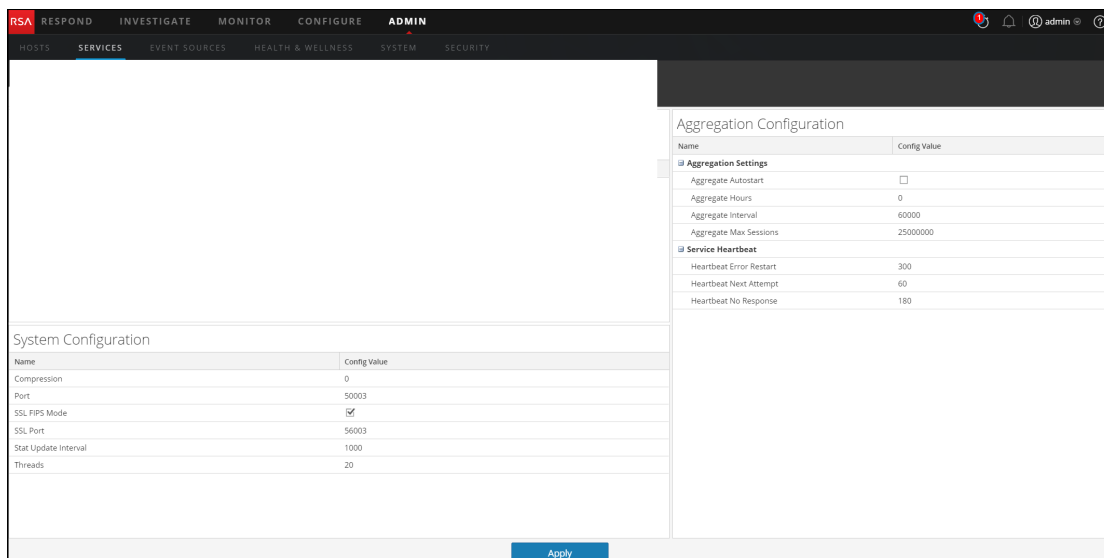
You can now investigate the captured data in the Investigation module.




## Start and Stop Aggregation in the Services Config View

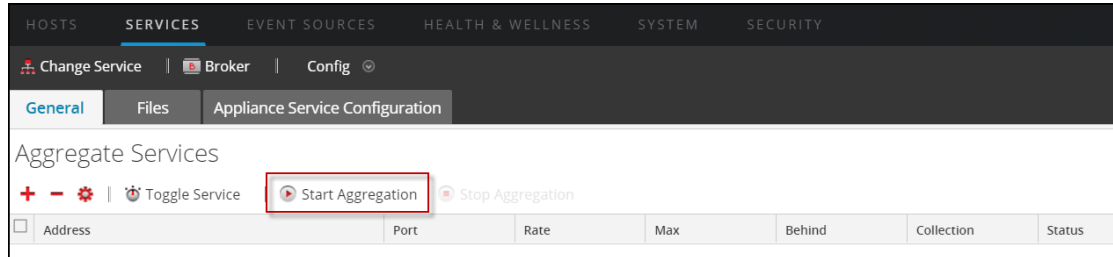
- In the **main menu**, select **ADMIN > Services**.
- In the **Admin Services** view, select a Broker or Concentrator, and select > **View > Config**.


The Services Config view, which includes the Aggregate Services section, is displayed.



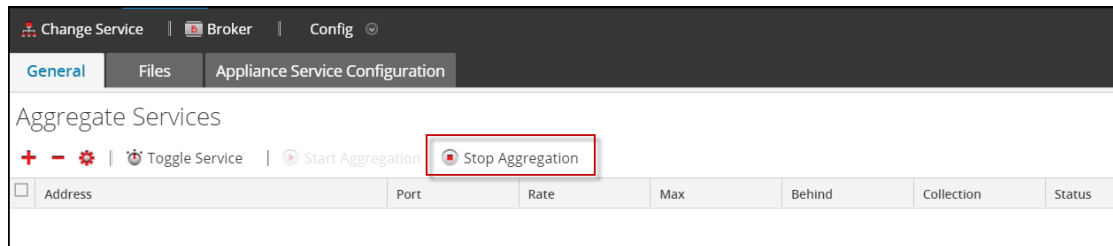
- To start aggregation on the selected Broker or Concentrator, click  **Start Aggregation** in the **Aggregate Services** toolbar.

When aggregation starts, the status of all online aggregate services changes to **consuming**. The Start Aggregation button is disabled and the Stop Aggregation button is enabled.



- To stop aggregation, click  **Stop Aggregation** in the **Aggregate Services** toolbar.

When aggregation stops, the status of all consuming aggregate services changes to **online**. The Stop Aggregation button is unavailable and the Start Aggregation button is available.



# Broker and Concentrator Configuration

## References

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You can configure Brokers and Concentrators using the NetWitness Suite user interface.

In addition to the views described here, you can view the complete service nodes in a tree form in the Services Explore view, see the "Services Explore View" topic in the *Hosts and Services Getting Started Guide*.

### Topics

- [Services Config View - Broker/Concentrator General Tab](#)
- [Services System View - Broker](#)

## Services Config View - Broker or Concentrator General Tab

The General tab for a Broker or Concentrator in the Services Config helps manage basic service configuration, configure the aggregate service, and configure the aggregation process between a Broker or Concentrator and the aggregate service.

Configuring the aggregate service (whose data is consumed and aggregated) includes:

- Adding, editing, and deleting Concentrators and Brokers as aggregate services
- Toggling an aggregate service online and offline
- Monitoring statistics for aggregate services
- Starting and stopping aggregation

Configuring the aggregation process includes setting:

- Aggregation autostart
- Timing and performance parameters, such as the number of sessions per round of aggregation and time between rounds
- The timing of attempts to restart, reconnect, or take offline a non-responsive aggregate service

### What do you want to do?

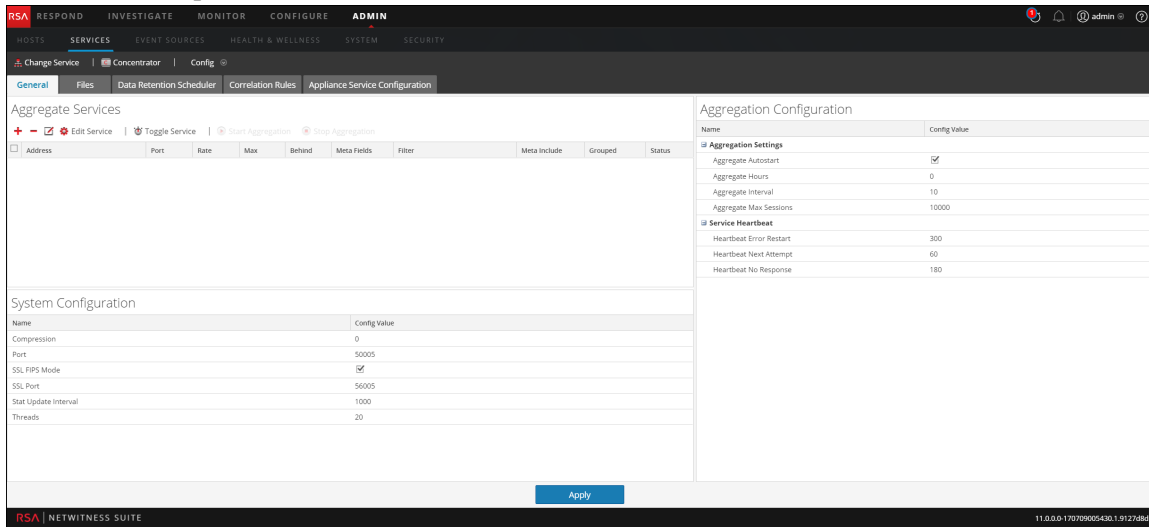
Role	I want to...	Refer to...
Administrator	Start and Stop aggregation	<a href="#">Aggregate Services Section</a>
	Add, edit, delete, and toggle an aggregate service	
Administrator	Manage System Configuration	<a href="#">System Configuration Section</a>

### Related Topics

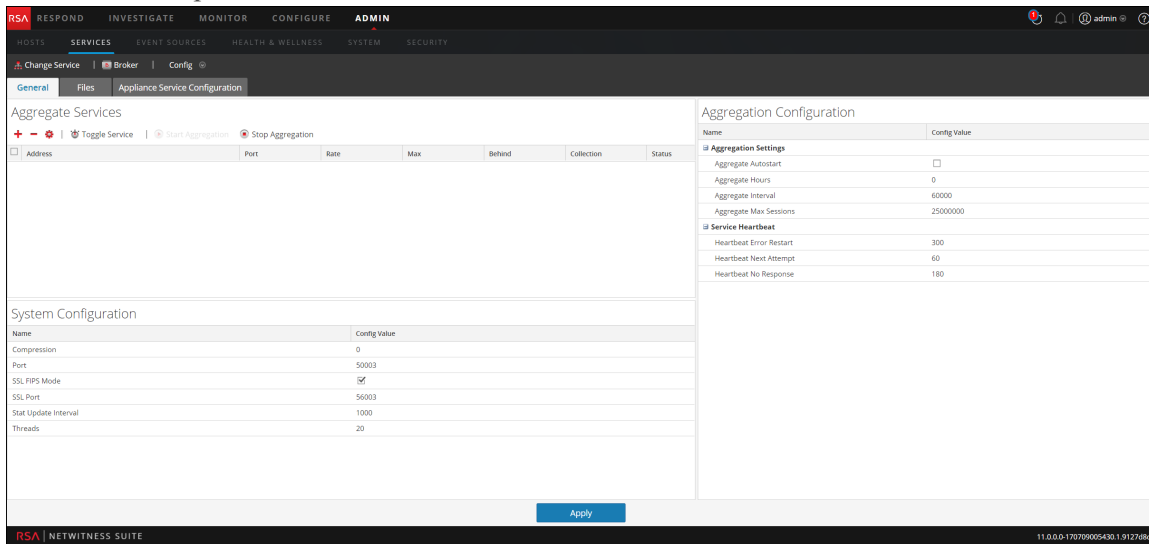
- [Broker and Concentrator Basics](#)
- [Broker and Concentrator Configuration](#)

### General tab

This is an example of the General tab for a Concentrator.



This is an example of the General tab for a Broker.







These are the three major sections in the General tab for Brokers and Concentrators:

- Aggregate Services
- System Configuration
- Aggregation Configuration

## Aggregate Services Section

The Aggregate Services section provides a way to start and stop aggregation, as well as add, edit, delete, and toggle an aggregate service. This is an example of the Aggregate Services section for a Concentrator.

General   Files   Data Retention Scheduler   Correlation Rules   Appliance Service Configuration										
Aggregate Services										
+   -  Edit Service      Toggle Service      Start Aggregation  Stop Aggregation										
<input type="checkbox"/>	Address	Port	Rate	Max	Behind	Meta Fields	Filter	Meta Include	Grouped	Status
<input type="checkbox"/>	10.31.125.245	50004	0	0	0				no	consuming
<input type="checkbox"/>	10.31.125.246	50002	0	0	0				no	consuming

The Aggregate Services section toolbar offers these options.

### Option

### Description



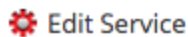
Opens a dialog in which you can add a Concentrator, Decoder, or Log Decoder as an aggregate service.



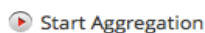
Removes the selected aggregate service.



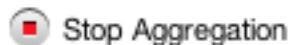
For Concentrators only, opens a dialog to edit **Meta Fields** and **Filter** values for the Concentrator.



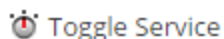
Enables you to enter the administrator credentials of the selected aggregate service so that it can communicate with the Broker or Concentrator.



When aggregation has been stopped or has not started, starts aggregating data from the online service in the list using the rules defined for the service.



When aggregation is in progress, stops aggregation on the Broker or Concentrator. This stops all services and flushes the index, which may take several minutes to complete. It is necessary to stop aggregate services in order to perform various administrative procedures.



Toggles the state of a service between offline and online. Only data from online service is consumed during aggregation.

The Aggregate Services section list has these columns.

Column	Description
<b>Address</b>	Lists the address of the service.
<b>Port</b>	Lists the port on which the service listens. The default ports are: <ul style="list-style-type: none"> <li>• 50001 for Log Collectors</li> <li>• 50002 for Log Decoders</li> <li>• 50003 for Brokers</li> <li>• 50004 for Decoders</li> <li>• 50005 for Concentrators</li> <li>• 50007 for other services</li> </ul>
<b>Rate</b>	Lists the number of metadata objects being written to the database per second. Values are rolling average samples over a short time period (10 seconds). After capture stops, the rate is reset to <b>0</b> .
<b>Max</b>	Lists the maximum number of metadata objects written to the database per second since capture started. Values are rolling average samples over a short time period (10 seconds). After capture stops, <b>Max</b> continues to show the maximum value during capture.
<b>Behind</b>	Lists the number of sessions on the service that need to be aggregated.
<b>Collection</b>	For Brokers only, indicates the collection that was selected when the Analyst Workbench service was added to the Aggregate Services section.
<b>Meta Fields</b>	For Concentrators only, lists the types of metadata being consumed by the aggregate service.
<b>Filter</b>	For Concentrators only, lists any filter being applied to the metadata being consumed by the aggregate service.
<b>Meta Include</b>	For Concentrators only, lists the number of types of meta included in the aggregate service.



Column	Description
<b>Grouped</b>	Whether or not the aggregate service is part of a group.
<b>Status</b>	<p>Lists the current status of the service:</p> <ul style="list-style-type: none"> <li>• online = available to provide data for consumption by the Broker or Concentrator</li> <li>• offline = not available to provide data for consumption by the Broker or Concentrator</li> <li>• consuming = providing data for consumption by the Broker or Concentrator</li> </ul>

### System Configuration Section

The System Configuration section manages service configuration for a service. When a service is first added, default values are in effect. You can edit these values to tune performance.

System Configuration	
Name	Config Value
Compression	0
Port	50005
SSL FIPS Mode	<input type="checkbox"/>
SSL Port	56005
Stat Update Interval	1000
Threads	20

The System Configuration section has these parameters.

Parameter	Description
<b>Compression</b>	<p>The minimum number of bytes that must be transmitted per response before compression. A setting of <b>0</b> disables compression. The default value is <b>0</b>. A change in value is effective immediately for all subsequent connections.</p>

Parameter	Description
<b>Port</b>	<p>The port on which the service listens. The default ports are:</p> <ul style="list-style-type: none"> <li>• 50001 for Log Collectors</li> <li>• 50002 for Log Decoders</li> <li>• 50003 for Brokers</li> <li>• 50004 for Decoders</li> <li>• 50005 for Concentrators</li> <li>• 50007 for other services</li> </ul>
<b>SSL FIPS Mode</b>	<p>When enabled (<b>on</b>), the security of data transmission is managed by encrypting information and providing authentication with SSL certificates. The default value is <b>off</b>.</p>
<b>SSL Port</b>	<p>Indicates the SSL port.</p>
<b>Stat Update Interval</b>	<p>The number of milliseconds between statistic updates on the system. Lower numbers cause more frequent updates and can slow down other processes.</p> <p>The default value is <b>1000</b>.</p> <p>A change in value is effective immediately.</p>
<b>Threads</b>	<p>The number of threads in the thread pool to handle incoming requests. A setting of <b>0</b> lets the system decide. The default value is <b>15</b>.</p> <p>A change takes effect on service restart.</p>

## Aggregation Configuration Section

The Aggregation Configuration section provides configuration settings that affect various aspects of the aggregation process. When you click **Apply**, the changes are saved; however, not all settings take effect immediately. The tables for Aggregation Settings and Service Heartbeat provide details.

**Caution:** Do not change any of these settings unless guided by the Developers or the Customer Support team. Contact the Customer Support, for any questions before editing any of these settings.

Aggregation Configuration	
Name	Config Value
<b>Aggregation Settings</b>	
Aggregate Autostart	<input type="checkbox"/>
Aggregate Hours	0
Aggregate Interval	60000
Aggregate Max Sessions	25000000
<b>Service Heartbeat</b>	
Heartbeat Error Restart	300
Heartbeat Next Attempt	60
Heartbeat No Response	180

### Aggregation Settings

Setting	Description
<b>Aggregate Autostart</b>	Option to start aggregation automatically each time the Broker or Concentrator is started. Checked means yes, unchecked means no. This change takes effect immediately.

Setting	Description
<b>Aggregate Hours</b>	<p>The number of hours back for each service that the Concentrator or Broker attempts to recover at the beginning of aggregation. This change takes effect immediately.</p> <ul style="list-style-type: none"> <li>• If the value is set to 0, aggregation for each service starts where it last left off, no matter the number of hours behind.</li> <li>• If the value is any positive integer, the Concentrator or Broker only consumes sessions less than that number of hours back.</li> </ul> <p>For example, if a service's most current session is +10 hours from the last session, this is what happens with two different Aggregate Hours values:</p> <ul style="list-style-type: none"> <li>• With a value of 12, the Concentrator or Broker starts consuming where it left off.</li> <li>• With a value of 4, all sessions between 5 and 10 hours back are skipped and the Concentrator or Broker starts consuming the session that started 4 hours back.</li> </ul>
<b>Aggregate Interval</b>	<p>The number of milliseconds between rounds of service aggregation. All services managed by the Broker or Concentrator request additional rounds of session and metadata to be aggregated. If a Broker or Concentrator is still consuming the previous round of data, it cannot request more until it finishes. Change takes effect immediately.</p>
<b>Aggregate Max Sessions</b>	<p>The maximum number of sessions that the Broker or Concentrator requests in a given round of data aggregation. Change takes effect after restart.</p>

### Service Heartbeat

In communicating with each aggregate service, Brokers and Concentrators monitor the heartbeat of the service. These parameters specify the timing of the first attempt to reconnect to a service after an error, the next attempt to reconnect, and taking the service offline after failure to reconnect.

Setting	Description
<b>Heartbeat Error Restart</b>	After a heartbeat error is detected on an aggregate service, specifies the number of seconds for a Broker or Concentrator to wait before attempting a service reconnect.
<b>Heartbeat Next Attempt</b>	After a failed attempt to reconnect to an aggregate service, specifies the number of seconds for a Broker or Concentrator to wait before attempting another service reconnect. Change takes effect immediately.
<b>Heartbeat No Response</b>	After failing to reconnect to an unresponsive service, specifies the number of seconds for the Broker or Concentrator to wait before taking the unresponsive service offline. Change takes effect immediately.

When editing parameters in the General tab, you must click **Apply** to save changes.

## Services System View - Broker or Concentrator

The Services System view displays information specific to specific to Brokers and Concentrators.

While information displayed in this view is the same for all types of Core services, several options in the toolbar are relevant only for Brokers and Concentrators.

### What do you want to do?

Role	I want to...	Refer to...
Administrator	Start and Stop aggregation Add, edit, delete, and toggle an aggregate service	<a href="#">Services System View - Broker or Concentrator</a>
Administrator	Manage System Configuration	<a href="#">Services System View - Broker or Concentrator</a>

### Related Topics

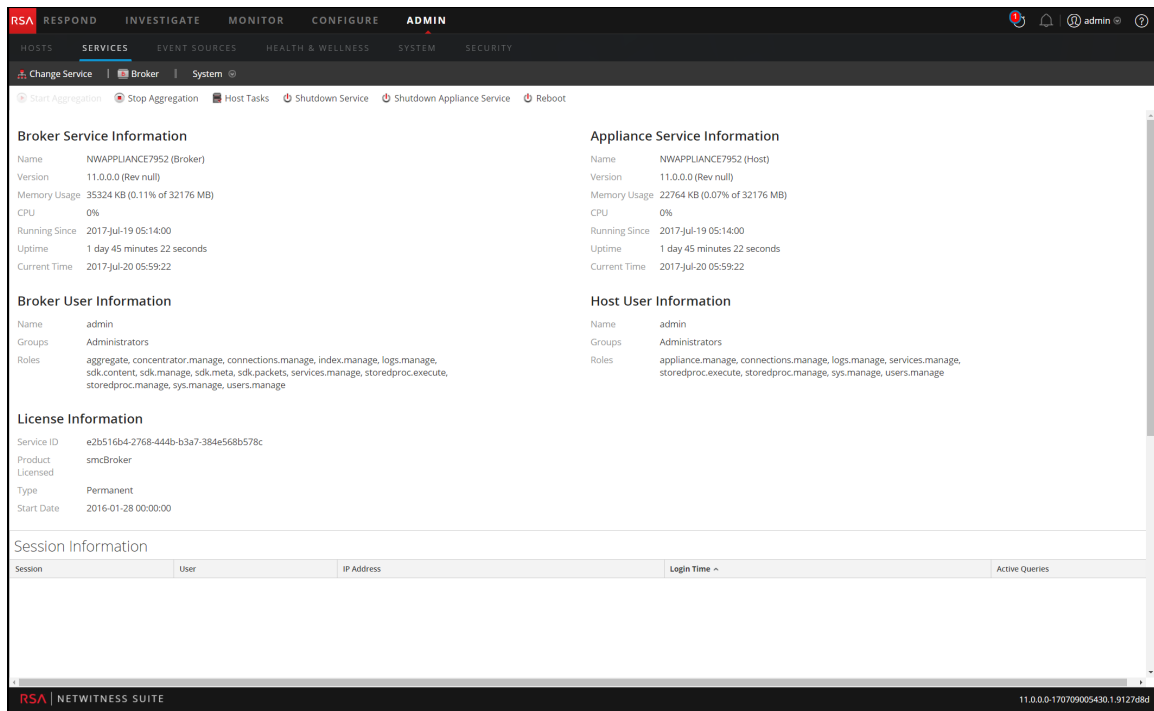
- [Broker and Concentrator Basics](#)
- [Broker and Concentrator Configuration](#)

### Services System View

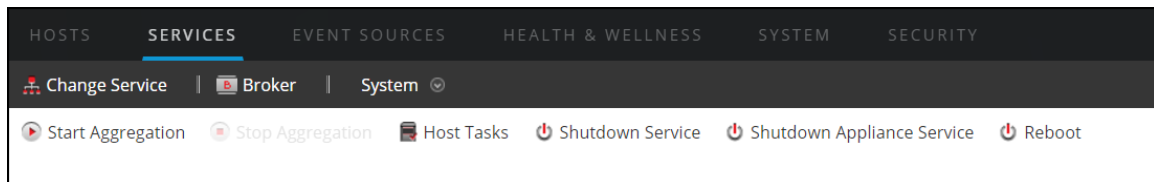
You can access this view by doing the following:

1. In the **main menu**, select **ADMIN > Services**.
2. Select a Concentrator or Broker, and select  > **View > System**.

The System view for the selected Concentrator or Broker is displayed.



The following figure is an example of the toolbar for a Broker or Concentrator.



Host Tasks, Shutdown Service, Shutdown Appliance Service or (Shutdown Appliance), and Reboot are common to all services and are described in the **Services System view** topic in the *Host and Services Getting Started Guide*.

This table describes toolbar options that apply only to a Concentrator or Broker. Both buttons are unavailable until aggregator services are configured and consuming data.

Action	Description
<b>Start Aggregation</b>	Starts aggregation of data being consumed on a Concentrator or Decoder configured as an aggregation service for the selected Broker or Concentrator. The Start Aggregation button is available only when aggregator services are configured and consuming data.
<b>Stop Aggregation</b>	Stops aggregation of data being consumed on a Concentrator or Decoder configured as an aggregation service for the selected Broker or Concentrator. The Stop Aggregation button is available only when aggregation is occurring.

