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Home

This is the home of the QFlex space.

To help you on your way, we've inserted some of our favourite macros on this home page. As you start creating pages, blogging and commenting you'll see the macros below fill up with all the activity in your space.

Recently Updated

- 3.3.2 Topology display options
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  (view change)
  Aug 20, 2011
- 3.3.1 Choosing topology settings
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  (view change)
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  Aug 20, 2011
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- 2.6.10 Security
  updated by techwriter
  (view change)
  Aug 20, 2011
- 2.6.9 Broker Compressions
  updated by techwriter
  (view change)

Aug 20, 2011

- More

Navigate space

Chapter 1. Installation for UNIX and Windows Environments

This chapter describes basic installation on fresh system, basic upgrade and advanced installation (with MySQL as the database).

1.1 Basic Installation (Fresh)

1. Download latest Qflex installer (.zip).
2. Ensure you have Java Development Kit 1.6 installed and its location is exported to **JAVA_HOME** environment variable.

   JRE (Java Runtime Environment) installation is not sufficient. JAVA_HOME must point to an JDK installation directory

   On Windows, JDK usually installs in C:\Program Files\Java\jdk1.6.0_18

3. Extract the archive into desired destination.
4. By default Qflex comes with HSQLDB that runs on port 9001.

   Default database credentials: *qflex/netflexity*

5. Change directory into **QFLEX_HOME/bin** and start up Qflex (database and tomcat server), using appropriate for your environment startup script (startup.bat or startup.sh).
6. Point your browser to http://localhost:8881 and select "For Administrators".
7. Specify the serial number (request if necessary from Downloads page) as well as default email account where all SMTP alerts would go.

Default Qflex admin credentials: *admin/admin*

1.2 Basic Upgrade

1. Download latest Qflex installer (.zip).
2. Extract the archive into desired destination, different from previous installation.
3. Perform the following procedure (just once) to port existing settings into new Qflex installation. Change directory into **QFLEX_HOME/bin/sql/update** and run update script (update.bat or update.sh) with option **-u** and path to your existing Qflex installation. See example below.

```
update.bat -u "C:\Program Files\Qflex"
```

4. Now, you can continue from point 5-6 of the installation guide above.

1.3 Advanced Installation (with MySQL as the database)

1. Please download latest Qflex installer (.zip)
2. Unzip into any desired directory.
3. Change directory into **QFLEX_HOME\bin\apache-tomcat-6.0.32\conf\Catalina\localhost** and rename current QFLEX.xml to QFLEX.xml.old. Rename QFLEX.xml.mysql to QFLEX.xml
4. Open QFLEX.xml for editing. Change host/ip, port, username, password if needed.
5. Change directory into **QFLEX_HOME**\bin\sql\install and run mysql-install.bat or mysql-install.sh to create qflex MySQL schema. Skip this step if you already have qflex schema created.

In case you already have Qflex running with MySQL and you want to upgrade, change directory into **QFLEX_HOME** \bin\sql\update and run mysql-updater.bat or mysql-updater.sh
Both update and install scripts take the following arguments:

```
update.sh db_user db_password hostname port
```

6. Start Qflex by executing startup.bat or startup.sh in **QFLEX_HOME**\bin

Running QFLEX as Windows service

1. Change directory into **QFLEX_HOME\bin\apache-tomcat-6.0.32\bin**
2. Run "As Administrator" command console (cmd.exe)
3. Execute following script:

```
service.bat install
```

Accessing Qflex Dashboard.

1. Point your browser to URL: http://localhost:8881 and select "For Business Users"
2. Use your login/password to enter dashboard.

Appendix

- If you are having issues. Please zip up whatever screenshots you deem necessary, and logs located in QFLEX_HOME\bin\tomcat\logs directory. Send everything to qflex@netflexity.com and someone will respond. Customers are encouraged to call our tech support number.

Chapter 2. For administrators

The following chapter shows how to operate and configure QFLEX for Administrators.

2.1 Managing Resources

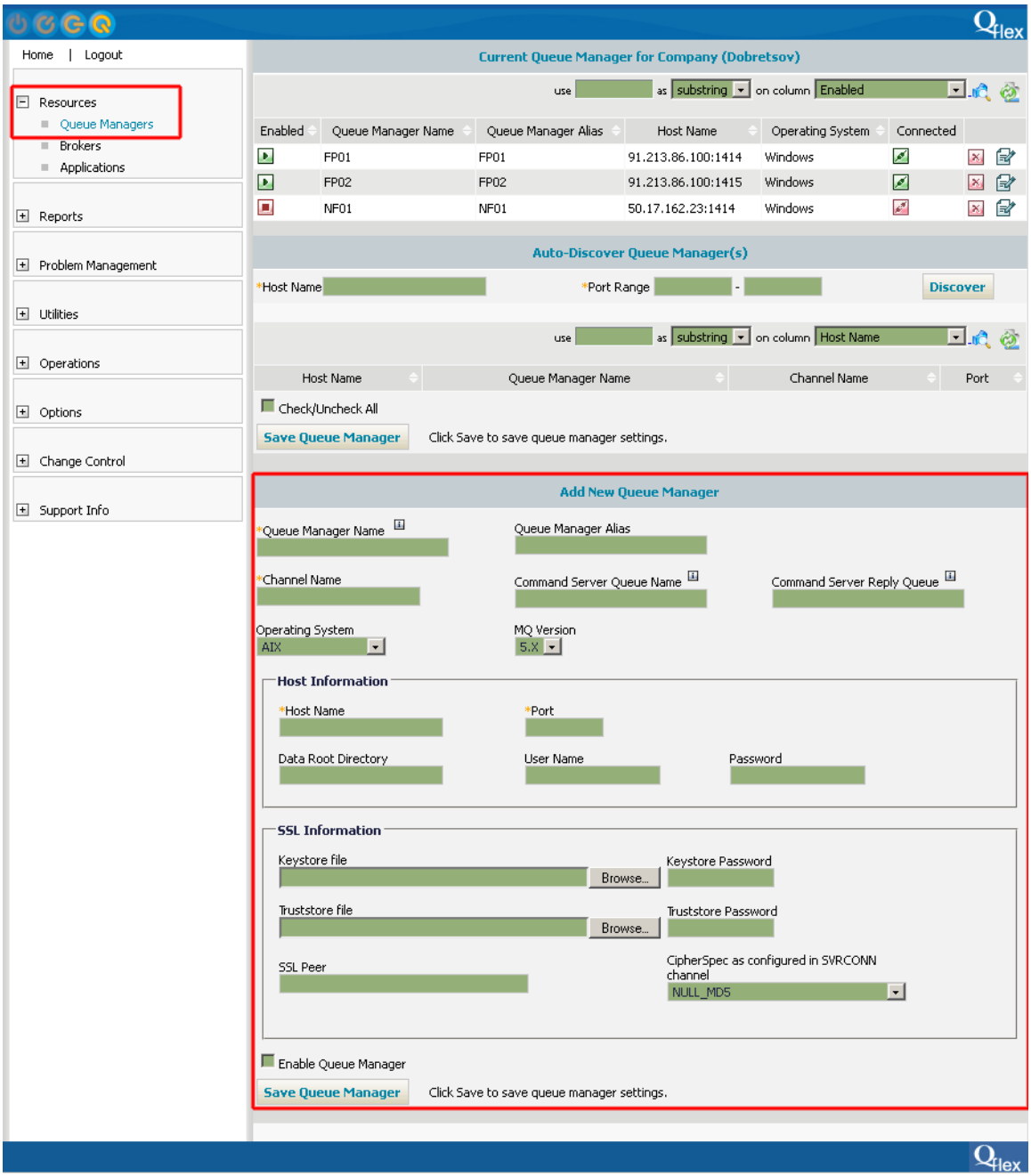
This chapter will explain how to add, edit and delete queue managers, brokers and applications from Qex domain.

2.1.1 Queue Managers

This chapter shows how to add, edit, delete and manage queue mangers.

2.1.1.1 Adding Queue Managers

Before anything productive can be done with Qex, we must add or register WebSphere MQ Queue Manager with Qex. In the left panel expand Resources and click on Queue Managers. You will see a list of the existing Queue Managers and a form for adding new queue managers:



Parameter Name	Purpose
Queue Manager Name	name of the WebSphere MQ queue manager that is to be added into Qex monitoring domain.
Queue Manager Alias*	if you have multiple queue managers with the same name or simply would like to assign a friendly queue manager name, alias can be used to do that.
Channel Name	is the SVRCONN type channel that has been dened for Qex to use.
Command Server Queue Name	is the queue which is serviced by the queue manager command server process. Z/OS Only.
Command Server Reply Queue	has to be a local or an alias queue that has been dened for use by Qex. Z/OS Only.

Operating System	as of release 1.0.x Qex only distinguishes between PCF aware and non-PCF aware queue managers. However it is highly recommended that correct operating system is selected in order to take advantage of future operating system specic functionalities in Qex and WebSphere MQ 6.0.
MQ Version	There are several versions of WebSphere MQ. Here you need to indicate version of the system that QFLEX will connect to.
Host Name	is the name of the server where where queue manager resides. IP addresses or DNS names are allowed.
Port	is the port number where queue manager listener is accepting connections from WebSphere MQ Clients.
Data Root Directory	AIX, HPUX, and Linux Only. Location of WebSphere MQ data directory such as /var/mqm. Qflex needs to know where the data directory is in order to enable features log file viewing, FDC and AMQERROR log monitoring.
Username and password*	Username and password Qflex will use to browse WebSphere MQ data directory such as /var/mqm. Qflex needs to have read permissions to data directory is in order to enable features log file viewing, FDC and AMQERROR log monitoring.
Keystore file and keystore password	keystore file is a JKS type keystore containing you client private key and a certificate.
SSL Peer	specifies the X500 peer name used in SSL channel negotiation.
CipherSpec	is the compatible CipherSpec that you have configured on SVRCONN channel.

* optional
** AIX, HPUX, and Linux only

Check ***Enable Queue Manager*** to switch it to enabled or disabled state. In disabled stated all monitors, statistics collectors, archive utilities and etc related to this particular QManager are switched off. If you add a QManager in disabled state, then monitoring systems will not be switched on.

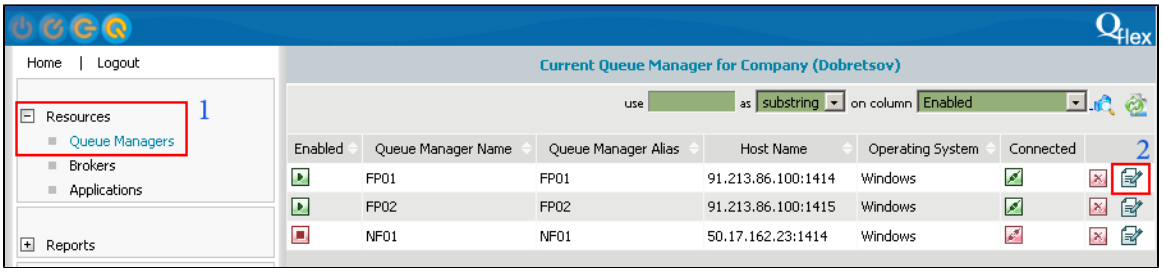
After lling out all of the necessary elds, press the ***Save Queue Manager*** button. The queue manager, queue manager listener and command server all have to be available at the time queue manager is added. If Qex fails to connect to the queue manager, it will not be added into monitoring domain.

More about Queue Manager Aliases
In certain instances when there is more than one queue manager in Qex domain with the same name or queue manager name is too long and using a shortcut name would be more preferential, one can dene queue manager aliases. These aliases are Qex aliases not WebSphere MQ Queue Manager aliases. By default, alias name is the same as queue manager, however should the alias be dened, it will be used in lieu of real queue manager name when working with:

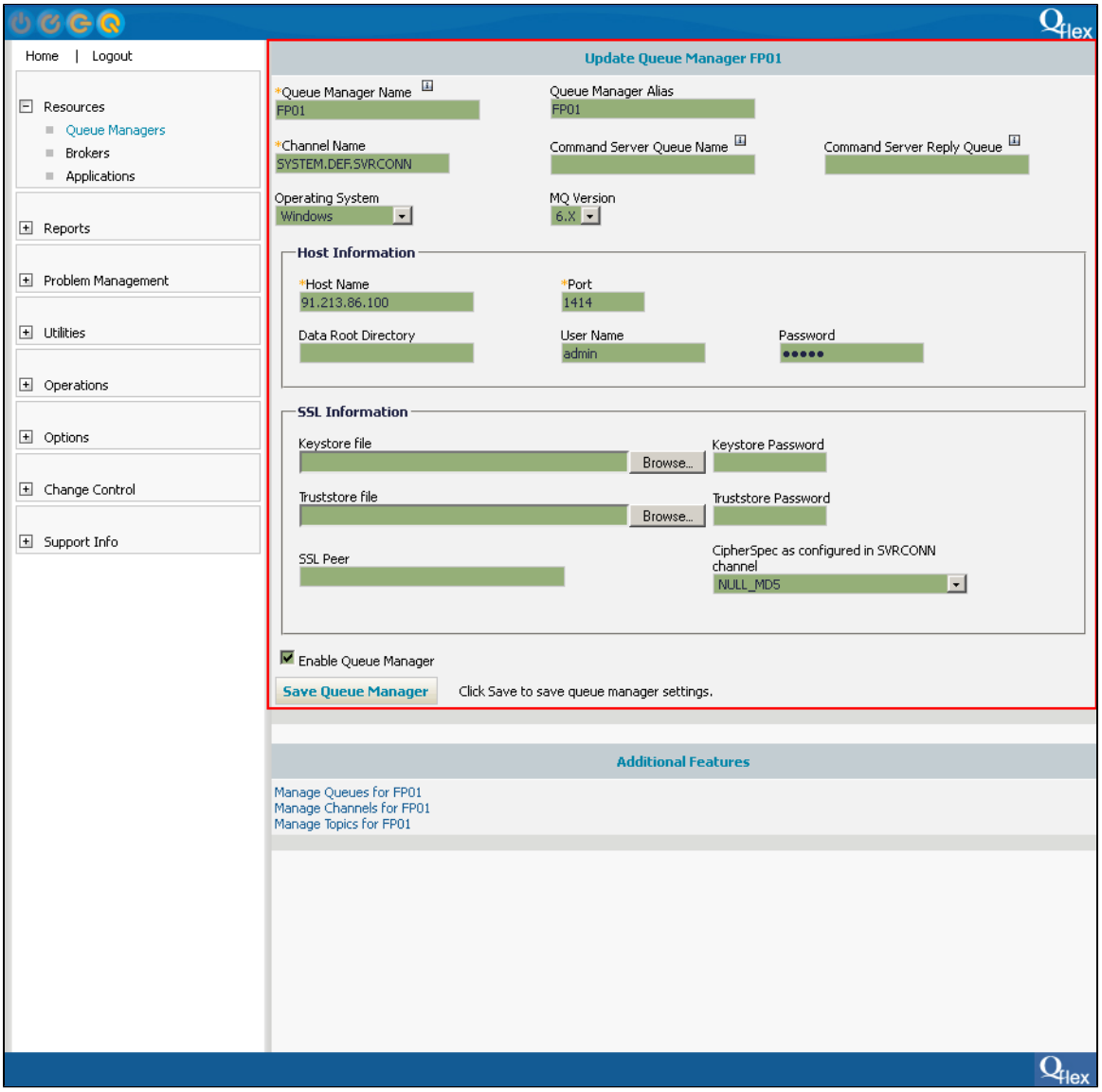
- Performance Reports
- Monitors
- Alerts

2.1.1.2 Editing Queue Managers

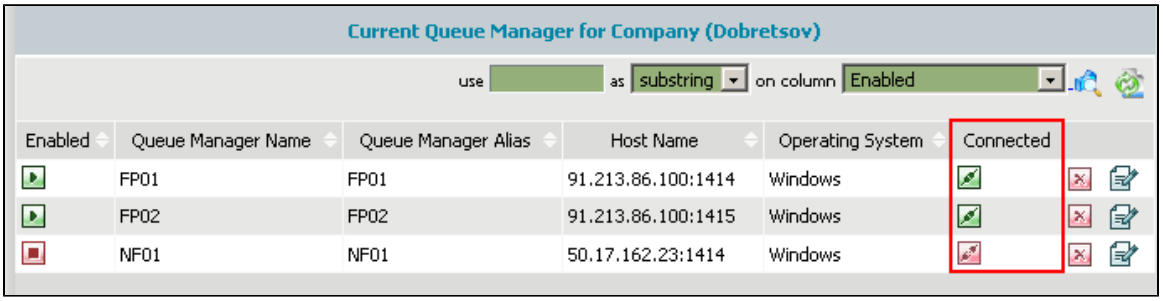
To edit the queue manager, navigate to ***Resources*** then ***Queue Managers*** (1) and click on ***Edit*** button (2):



Change whichever properties you need and press ***Save Queue Manager*** button:



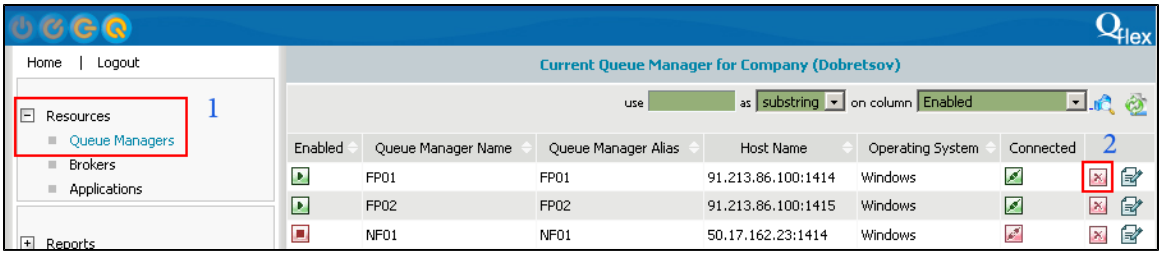
The green or red icon in the ***Connected*** status column indicates whether Qex is able to connect to the queue manager at the moment:



If there are more queue managers added to Qex domain than t on a single page, there will be > and >> buttons at the bottom that will allow to scroll to the next and last pages listing queue manager names.

2.1.1.3 Deleting Queue Managers

To delete queue manager, navigate to ***Resources*** then ***Queue Managers*** (1) and click on ***Delete*** button (2):

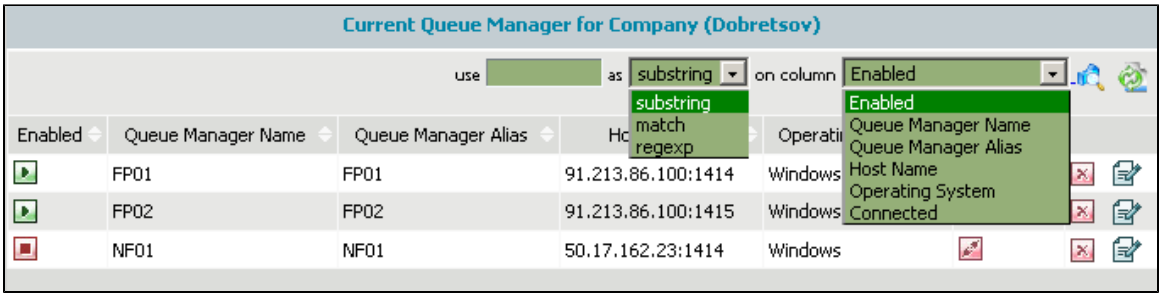


Deleting the queue manager will delete all data associated with that queue manager:

- Statistics
- Monitors
- Existing Alerts

2.1.1.4 Searching queue managers

To search for specific queue manager you can use the ***Search*** toolbar with the following categories:

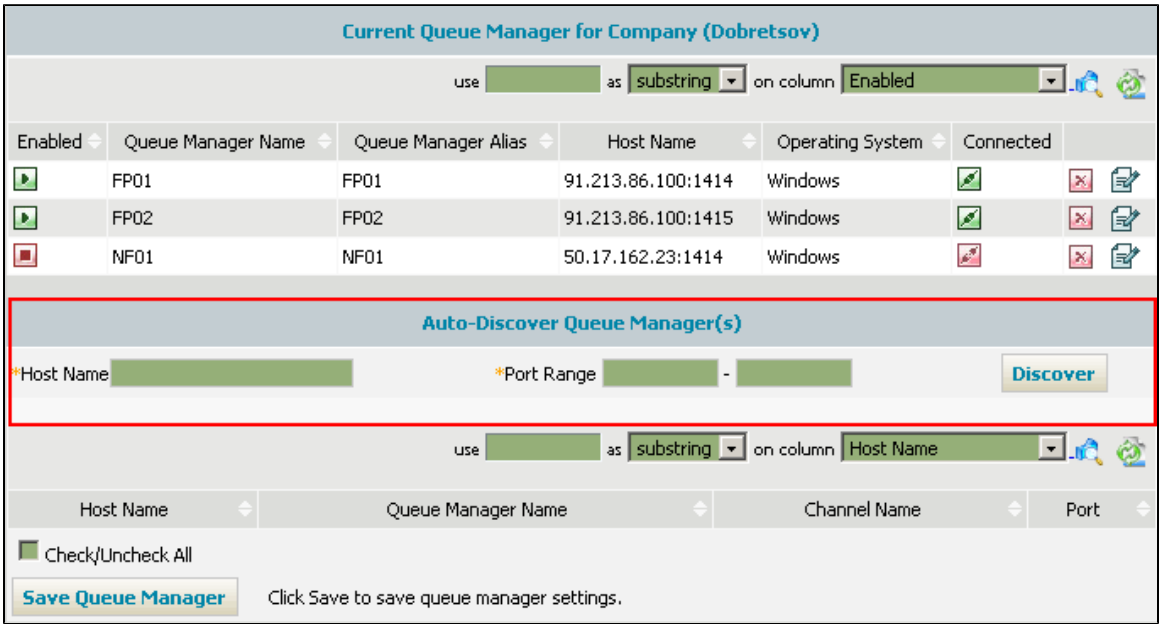


Use - use for searching input text.
As - ***substring, match*** or ***regexp***.
On column - ***Enabled, Queue Manager Name, Queue Manager Alias, Host Name, Operating System*** or ***Connected*** status.

Press ***Search*** button to initiate search process or ***Refresh*** button to reload the data.

2.1.1.5 Auto-Discover Queue Manager(s)

You can search for a specific queue manager(s) using ***Auto-Discover Queue Manager(s)*** option:



Indicate ***Host Name*** and ***Port Range*** of Queue Manager and then press ***Discover*** button.

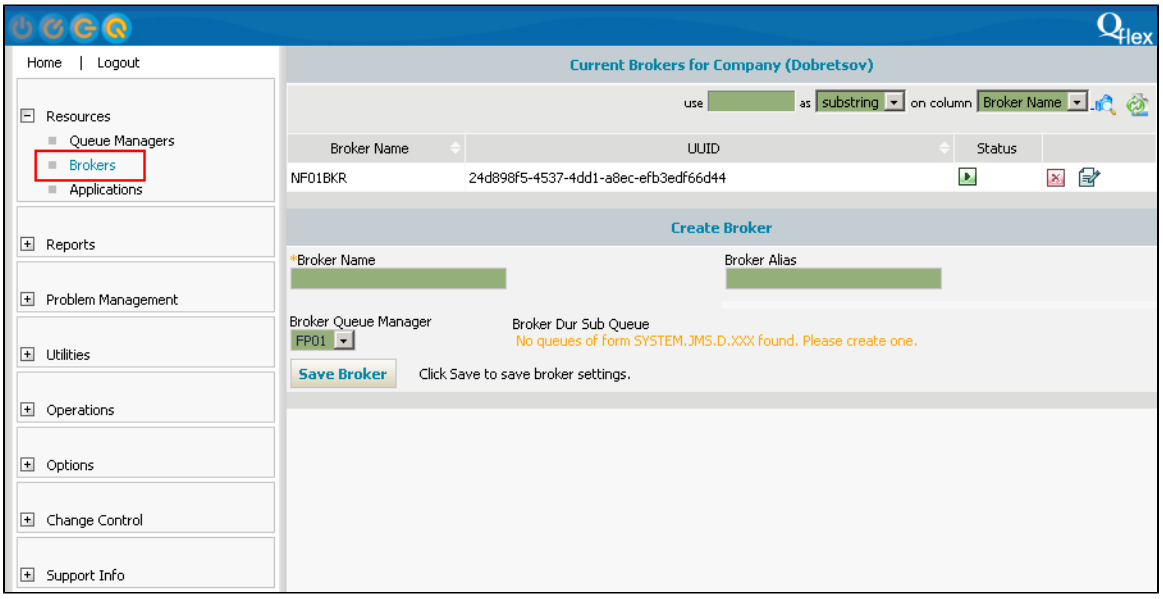
2.1.2 Brokers

This section shows how to work with brokers.

To manage Brokers go to ***Resources*** and press ***Brokers***.

2.1.2.1 Creating new broker

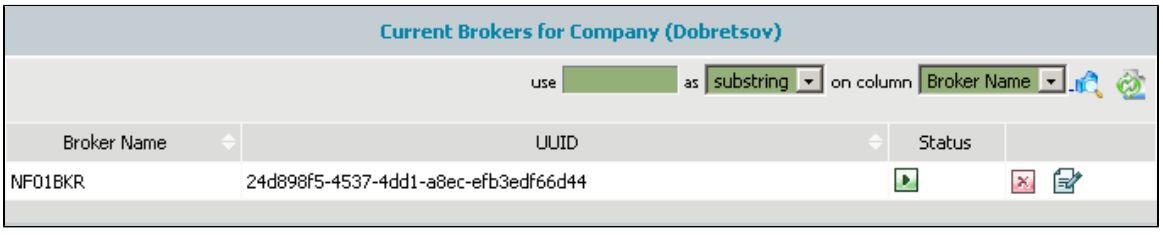
In ***Create Broker*** section set the following data and then press ***Save Broker*** button:



Parameter Name	Purpose
Broker Name	is the name of the WebSphere Message Broker that is to be added into Qex monitoring domain.
Broker Alias	is the display name of the broker queue manager when environment contains multiple brokers with the same Broker Queue Manager name.
Broker Queue Manager	is the queue manager on top of which Message Broker runs.
Broker Durable Subscription Queue	is the name of the queue that Qex will use to create various broker subscriptions. Note this queue has to begin with prex SYSTEM.JMS.D.*, e.g. SYSTEM.JMS.D.QFLEX. It is not recommended to use generic durable subscription queues used by other subscribers such as SYSTEM.JMS.D.CC.SUBSCRIBER.QUEUE.

2.1.2.2 Viewing existing brokers

Current Brokers section shows existing brokers with the following data:



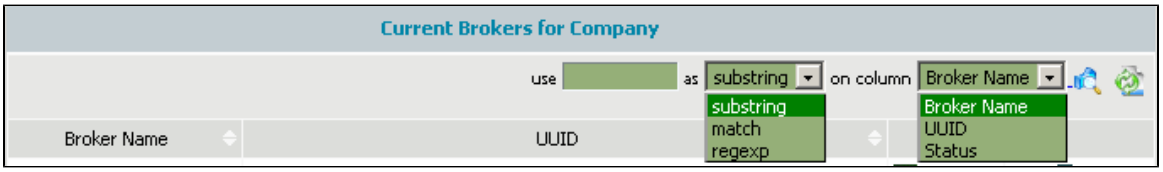
Broker Name - title of message broker added to monitoring domain.

UUID - Native IBM Message Broker UUID that identifies particular broker.

Status - Running - or Stopped - .

Editing buttons - Delete and Edit .

If you have a big list of brokers use ***Search*** toolbar to sort brokers by the following data:

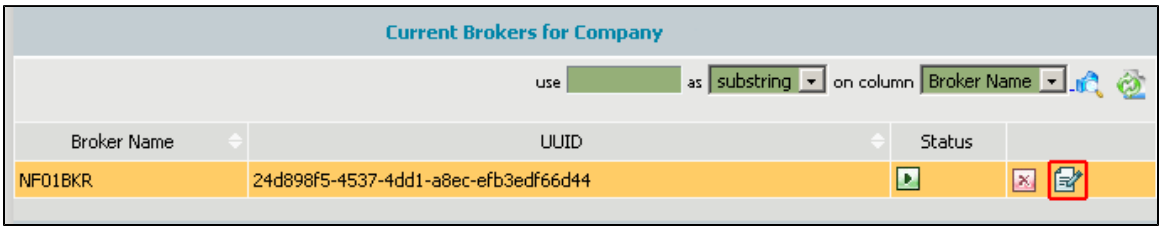


Use - search string to look up by.
As - ***substring, match*** or ***regexp.***
On column type - ***Broker Name, UUID*** or ***Status***.

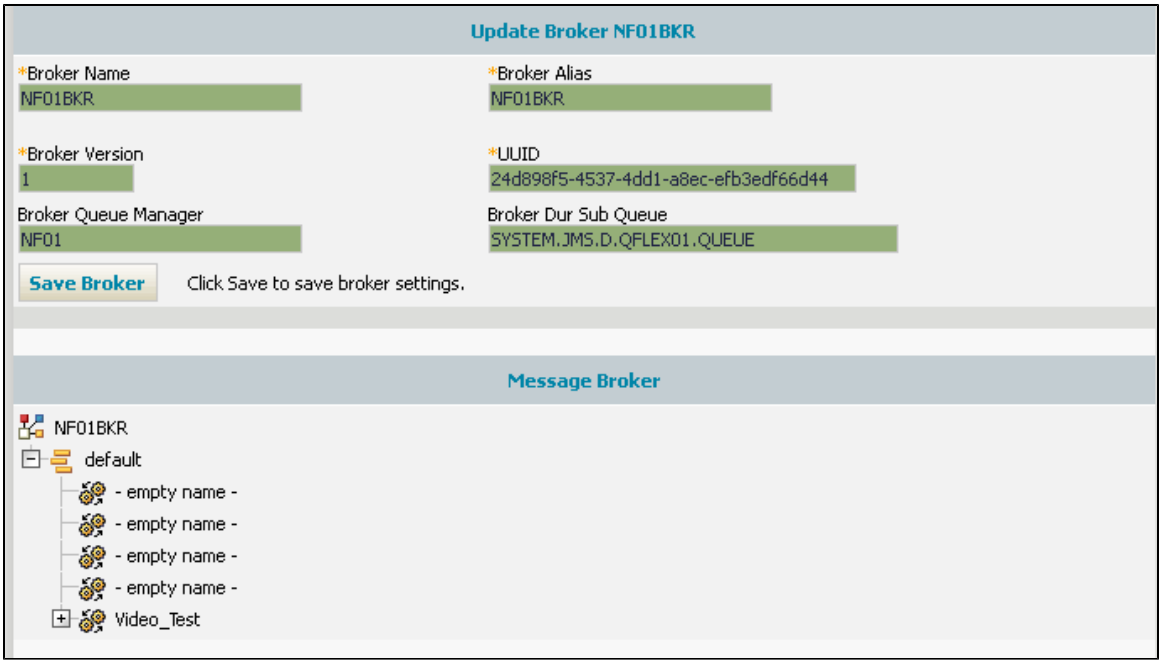
Press ***Search*** button to initiate search process or ***Refresh*** button to reload the data.

2.1.2.3 Editing brokers

Select broker you want to edit and press ***Edit*** button :



In the opened page you can modify broker data and view topology in the ***Message Broker*** section:



Press ***Save Broker*** button to save new settings.

2.1.3 Managing virtual applications

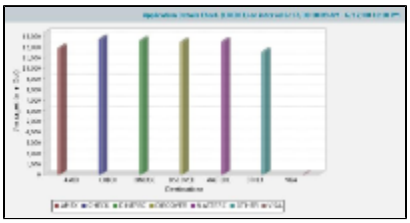
Virtual Applications provide a different method to interpret queue statistics and alerts collected and managed by Qflex. Virtual Application can be associated with one or more queues, where a queue can be associated with an application as an input, output or an error queue.

Later on, reports per application can be viewed, hence abstraction the notion of queue names and queue manager names from someone who

does not need to see all those technical details but is rather concerned with the overall application performance.

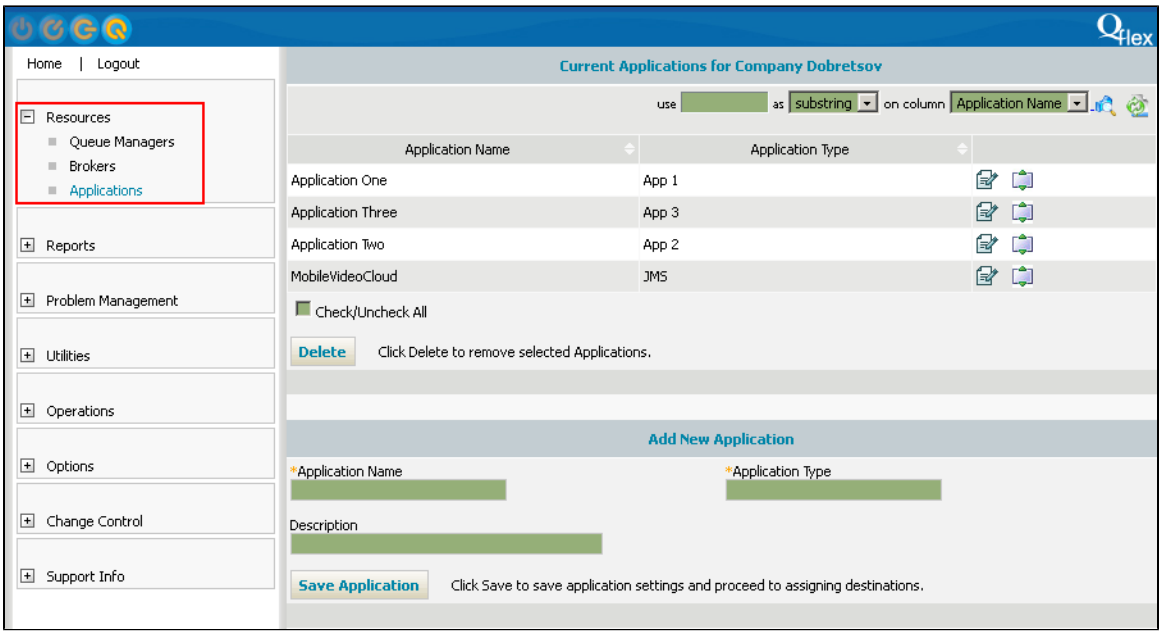
You can also assign "business friendly" labels to queue names, so that when queue stat reports are rendered, labels will be used instead of queue names.

Here is a sample virtual application report where queue names are hidden:



2.1.3.1 Creating virtual application

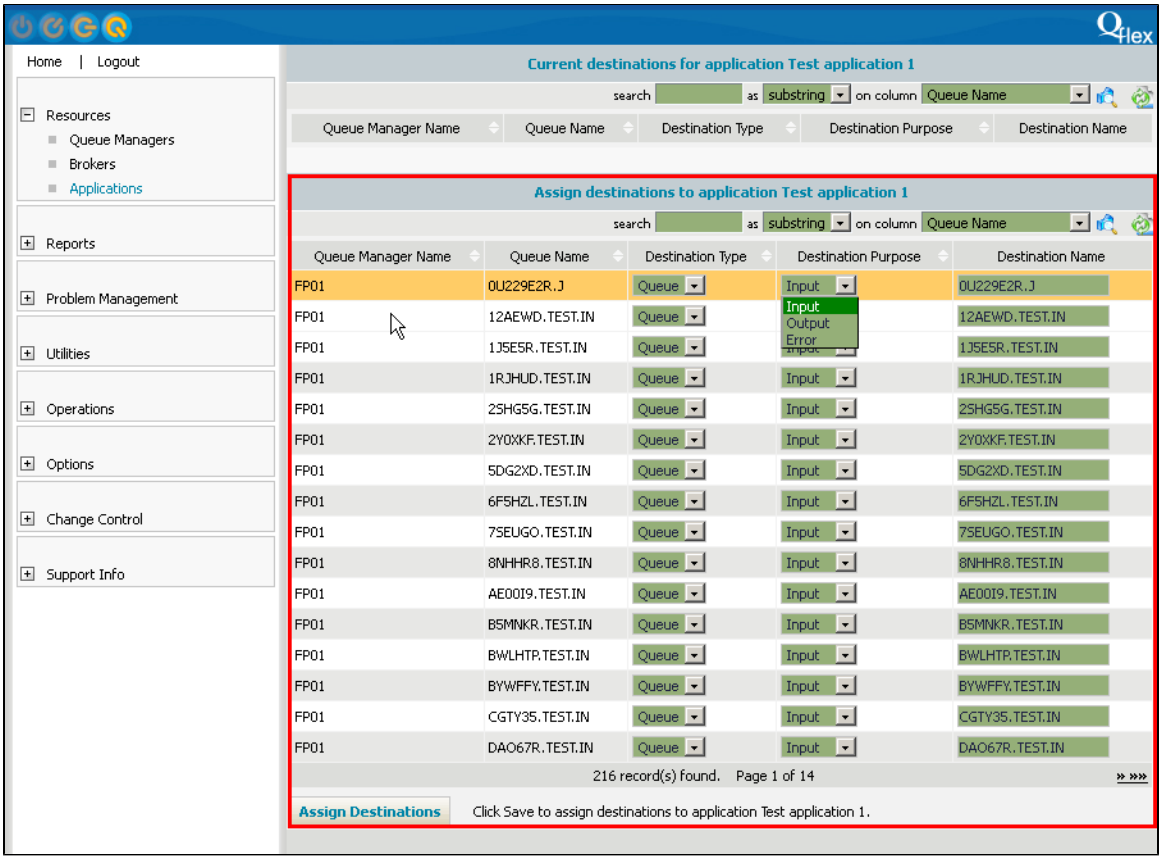
In order to create a virtual application, navigate to ***Resources*** and then ***Applications***:



Parameter Name	Purpose
Application Name	name you would like to assign to the virtual application.
Application Type	this is a free text field. You can assign whatever types you need.
Description	any comments or description of application.

Click on ***Save application*** button to create your virtual application.

The next screen allows you to assign various queues to virtual application:



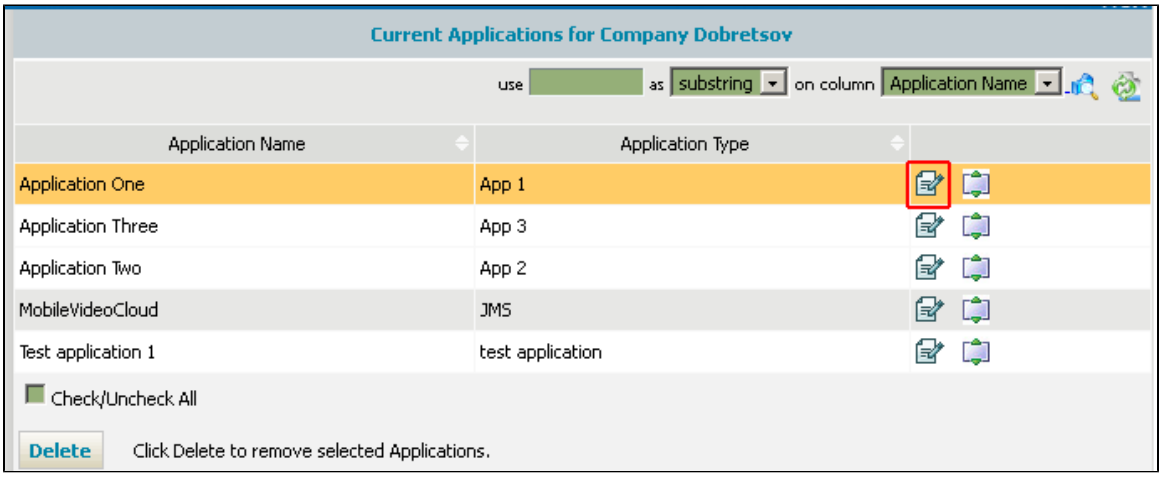
Click on queue names you would like to be added and then choose the following parameters:

Parameter Name	Purpose
Destination Type	Currently only Queue is available as Destination Type.
Destination Purpose	Input for incoming data, Output for outgoing data, Error for collecting errors
Destination Name	By default Destination Name can be named as you wish.

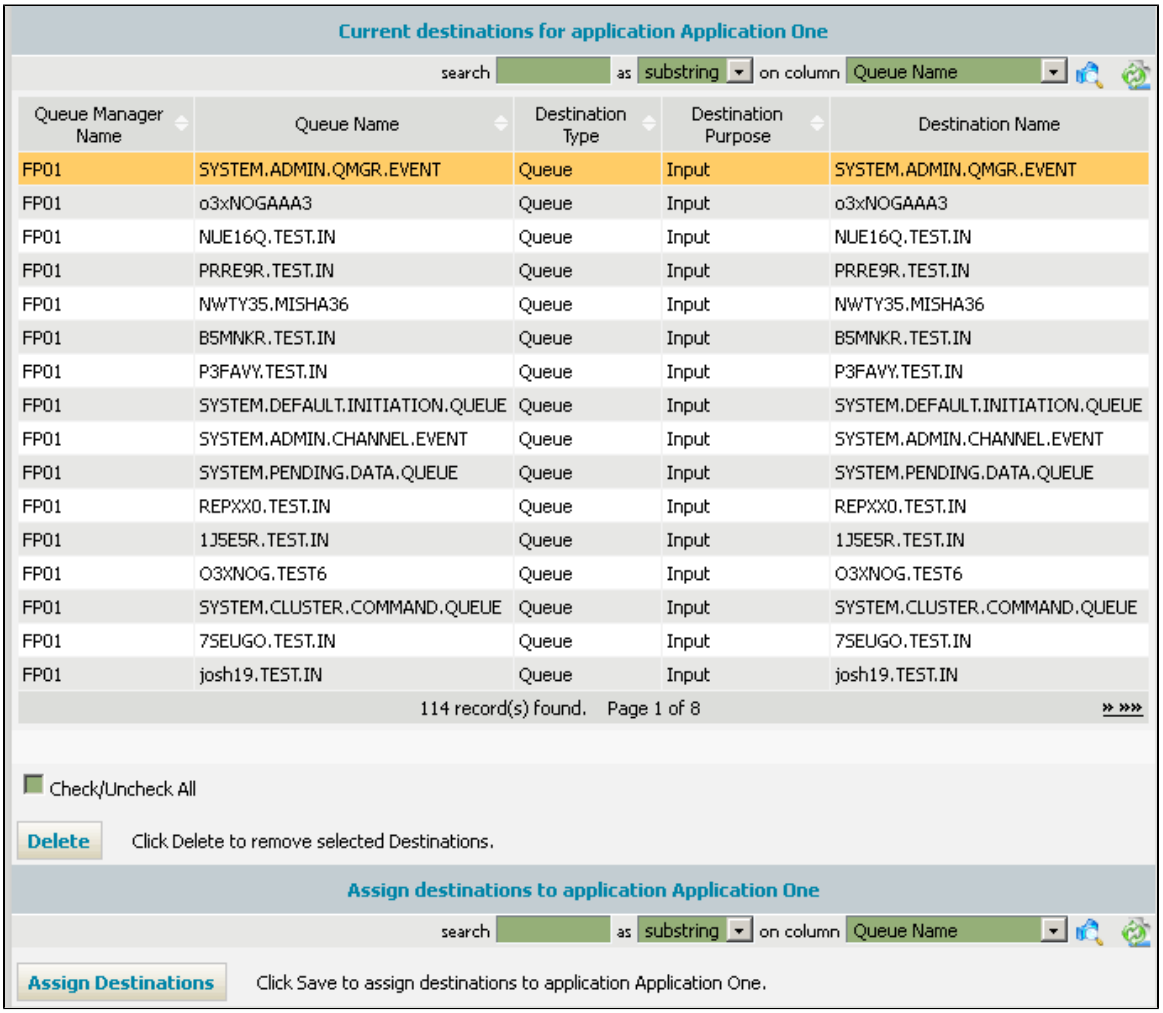
Press ***Assign Destinations*** button to save destinations for selected application.

2.1.3.2 Editing application

To update an application select it and press ***Update*** button - :

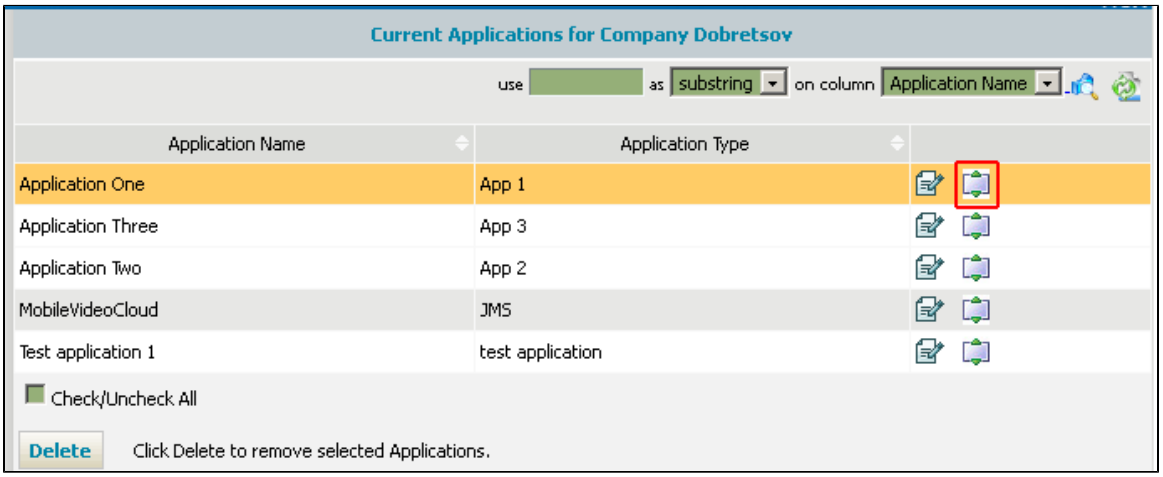


You will see current destinations for selected applications which can be deleted:

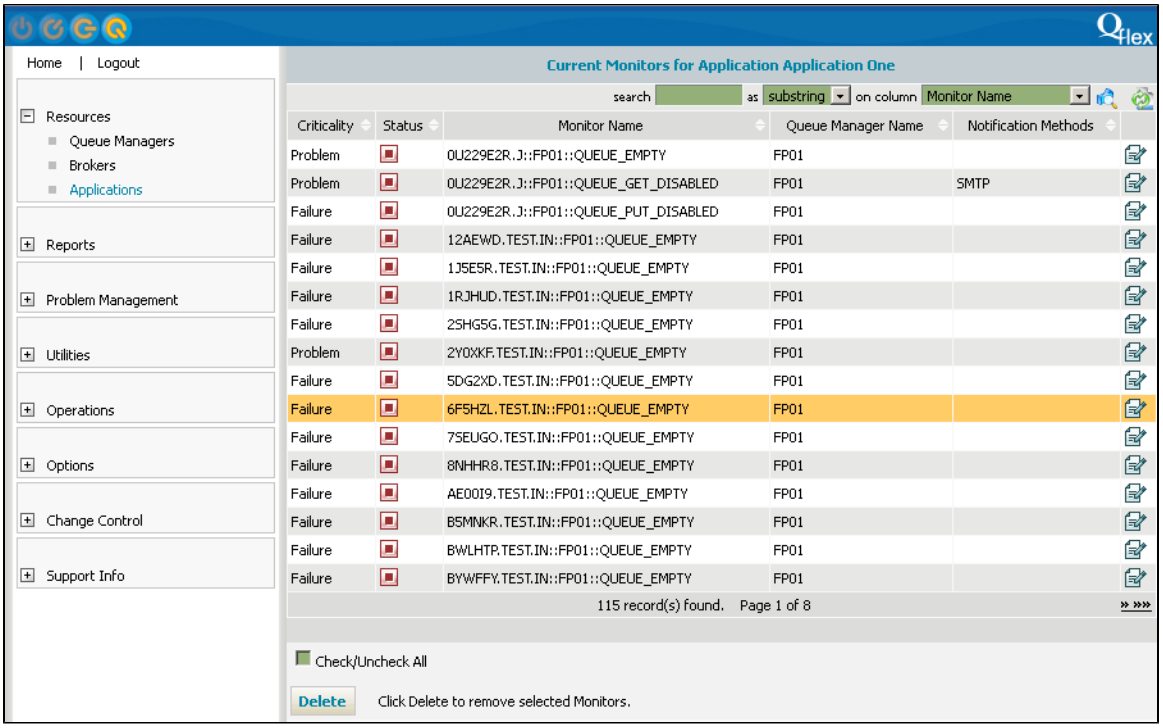


2.1.3.3 Viewing application monitors

To view application monitors select an application and press ***View*** button - :

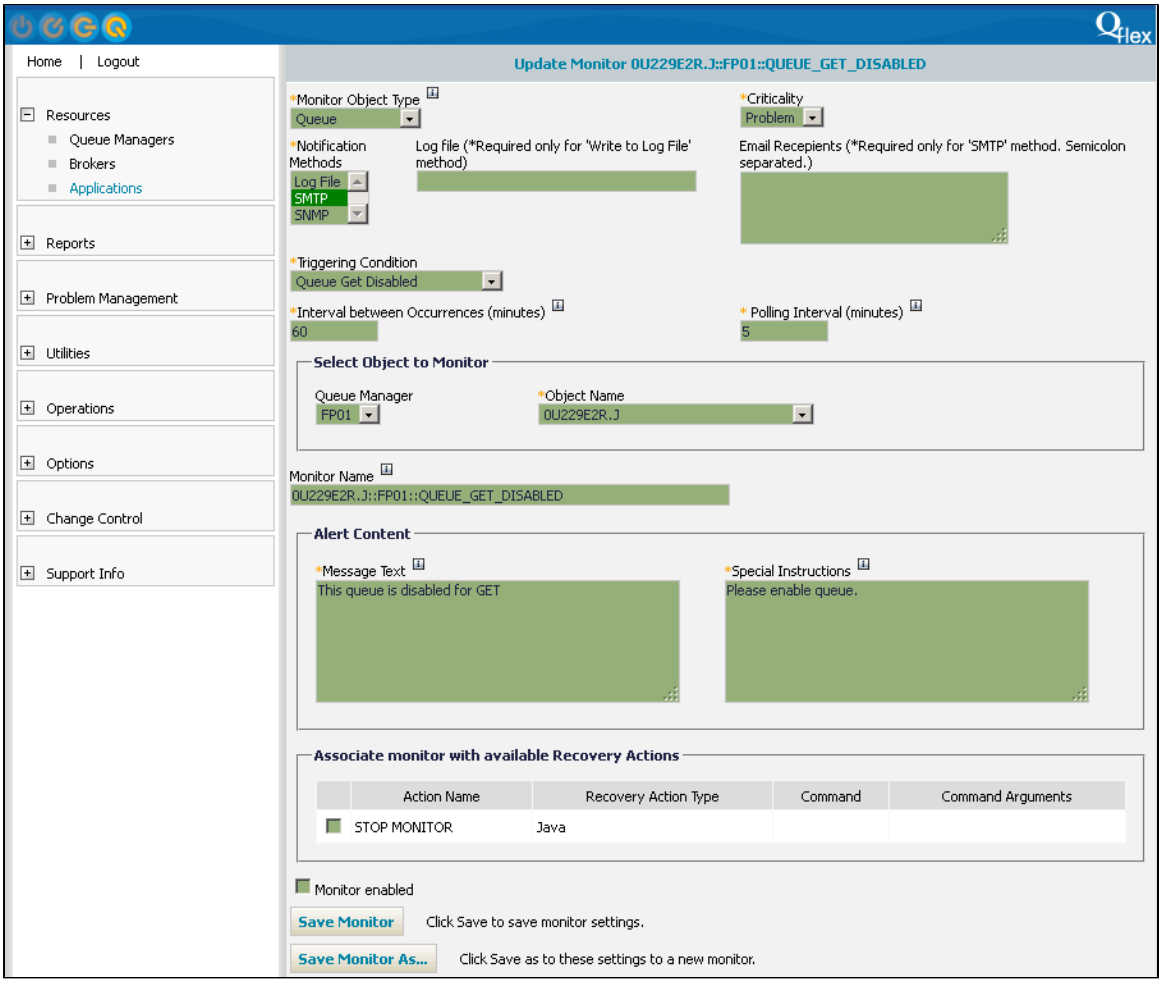


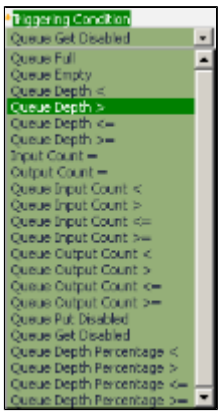
In the opened webpage you will see a list of application monitors with the following data:



Parameter Name	Purpose
Criticality	Alerts can have one of the following levels: Failure, Problem, Warning, Info. You can assign one of these alerts depending on how critical the situation is in which the monitor is activated. For example situation QManager down should be marked as Failure.
Status	stopped, and running.
Monitor name	assigned title of the monitor.
Queue manager name	name of queue manager to which the monitor is assigned.
Notification methods	mode of notification delivery: SMTP, SNMP, Log File. By default all alerts are always preserved in the database and can be view through "Existing Alerts" page.

If you want to edit monitor, select an application monitor and press ***Display Monitor*** button at the end of the row. ***Update Monitor*** page will appear where you can modify the following data:



Parameter Name	Purpose
Monitor Object type	set Queue, Queue Manager, Channel, QoS, Broker or Flow.
Criticality	Failure, Problem, Warning, Info. It is used on dashboard to prioritize resolution of alerts.
Notification Methods	Log file, SMTP or SNMP.
Log file	Required only for 'Write to Log File' method.
Email Recipients	Required only for 'SMTP' notification method. Semicolon separated.
Triggering Condition	

Interval between Occurrences (minutes)	time period between alerts notifications. Here, one can control how often to send an alert for a particular monitor event. For example, if you think you need to receive an alert only if it has been happening for at least an hour, you set this parameter to 60 (minutes). This way, you will see 1 alert message after the first occurrence and the next one in an hour.
Polling Interval (minutes)	time period between monitor is triggered to check the condition. Basically, the monitoring interval.
Select Object to Monitor	Choose Object Name (Qmanager, Queue or Channel) to monitor. Object type depends on the selected monitor type.
Monitor Name	assigned title of the monitor.

Alert Content section
Here you can type notification in the Message Text box and in Special Instructions text with advice or command for user. Essentially, here you define the content of the alert.

Associate monitor with available Recovery Actions section
Check here the box next to an Action you want the monitor to be associated with.

By checking ***Monitor enabled*** checkbox the monitor becomes active upon creation.

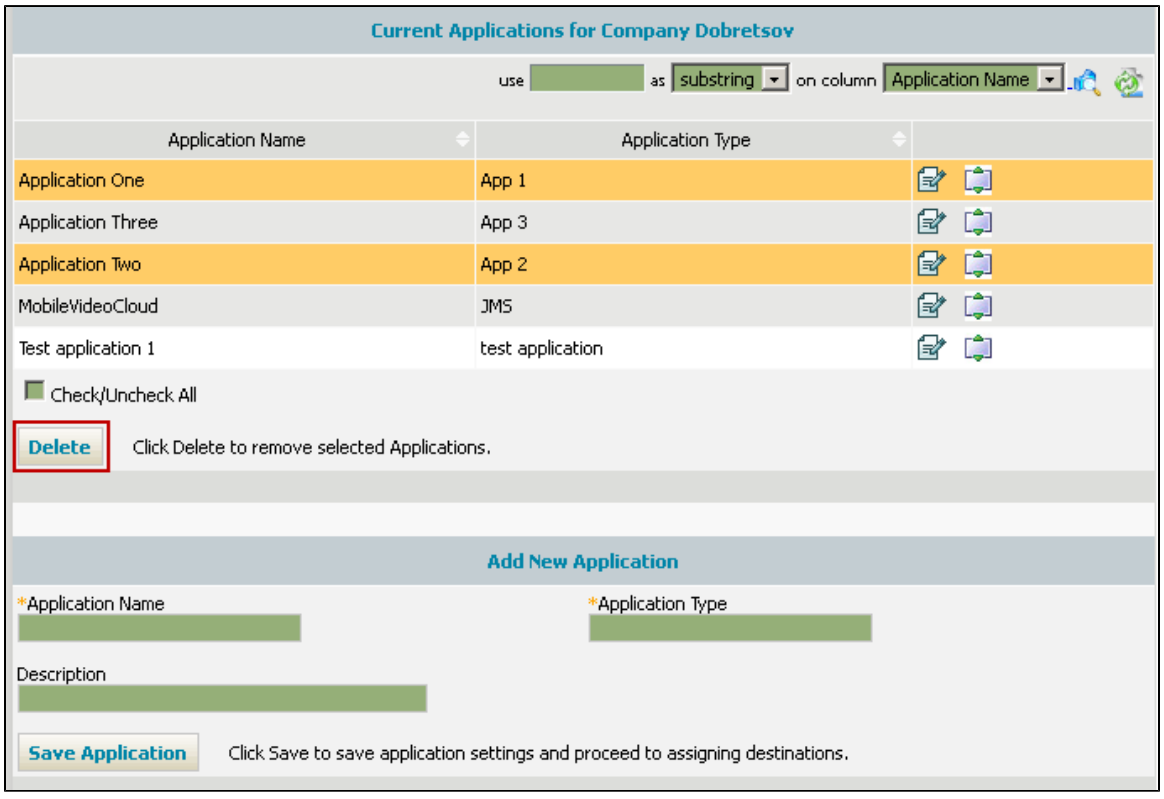
By pressing ***Save Monitor*** button you will save the new settings.

If you want to assign new settings to another monitor:

1. Press ***Save Monitor As*** button.
2. Choose ***Current Monitors*** or ***Unmonitored queries*** in the ***Select view*** dropdown menu.
3. Select a monitor from the list and press ***Save Monitor*** button.

2.1.3.4 Deleting application

To delete one or several applications use ***Check/Uncheck all*** checkbox or simply click on application to select it and then press ***Delete*** button:



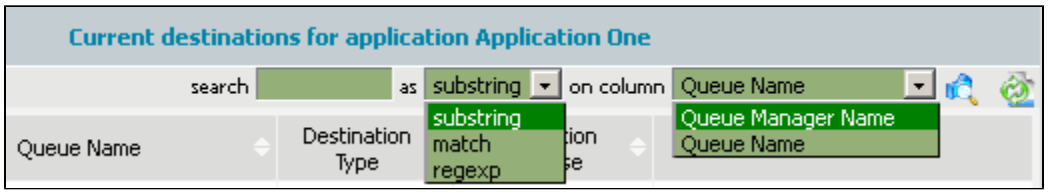
2.1.3.5 Using search toolbar

Search bar in ***Current Applications*** section allows using text as ***substring, match, regexp*** on column ***Application Name*** or ***Application Type***:

Press ***Search*** button to initiate search process or ***Refresh*** button to reload the data.

In ***Current Monitors*** page you can search monitor names as ***substring, match, regexp*** on column ***Monitor Name*** or ***Queue Manager Name***:

In ***Current destinations*** section you can search destination names as ***substring, match, regexp*** on column ***Queue Name*** or ***Queue Manager Name*****:**



2.2 Managing Reports

Qex allows viewing performance data of queue managers that had been added to Qex. In order to view the performance data, ensure that you have set up a Data Collection Policy and it had been started in the Operations Console.

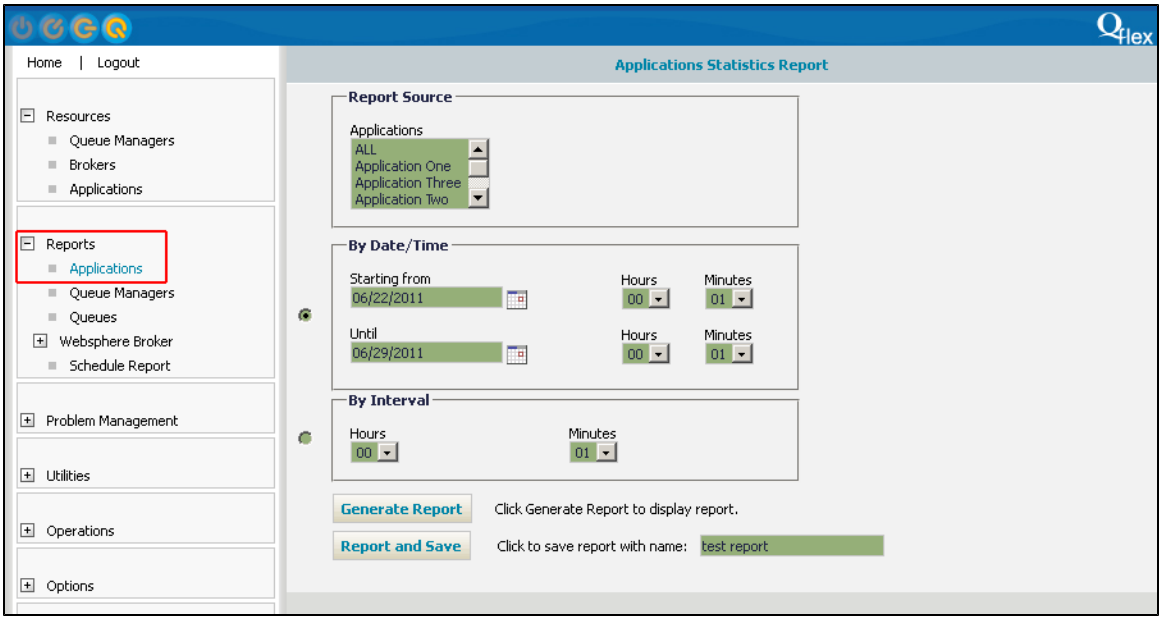
Reports can be viewed at the Queue for a specic Queue Manager or at the Queue Managers Level. At the queue level, you will be able to see statistics for all queues for a particular interval in time. At the queue manager level, you will be able to see the total statistics for each queue manager.

2.2.1 Applications

This section shows how to create reports for Applications, compare them and use sort filter.

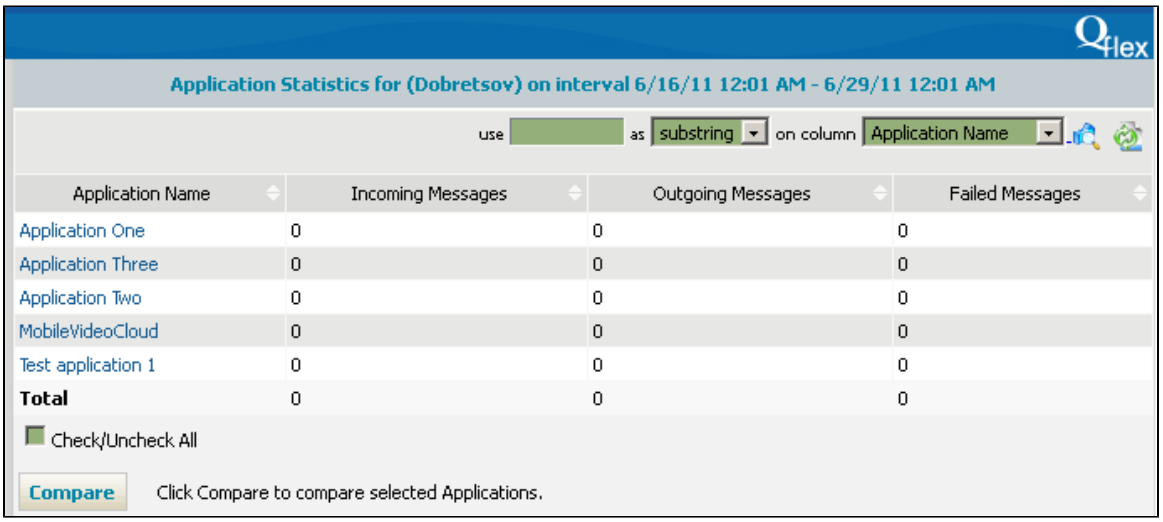
2.2.1.1 Creating reports for Applications

Go to ***Reports*** and click on ***Applications*** to create statistics report. ***Applications Statistics Report*** page will appear where you can set the following data:

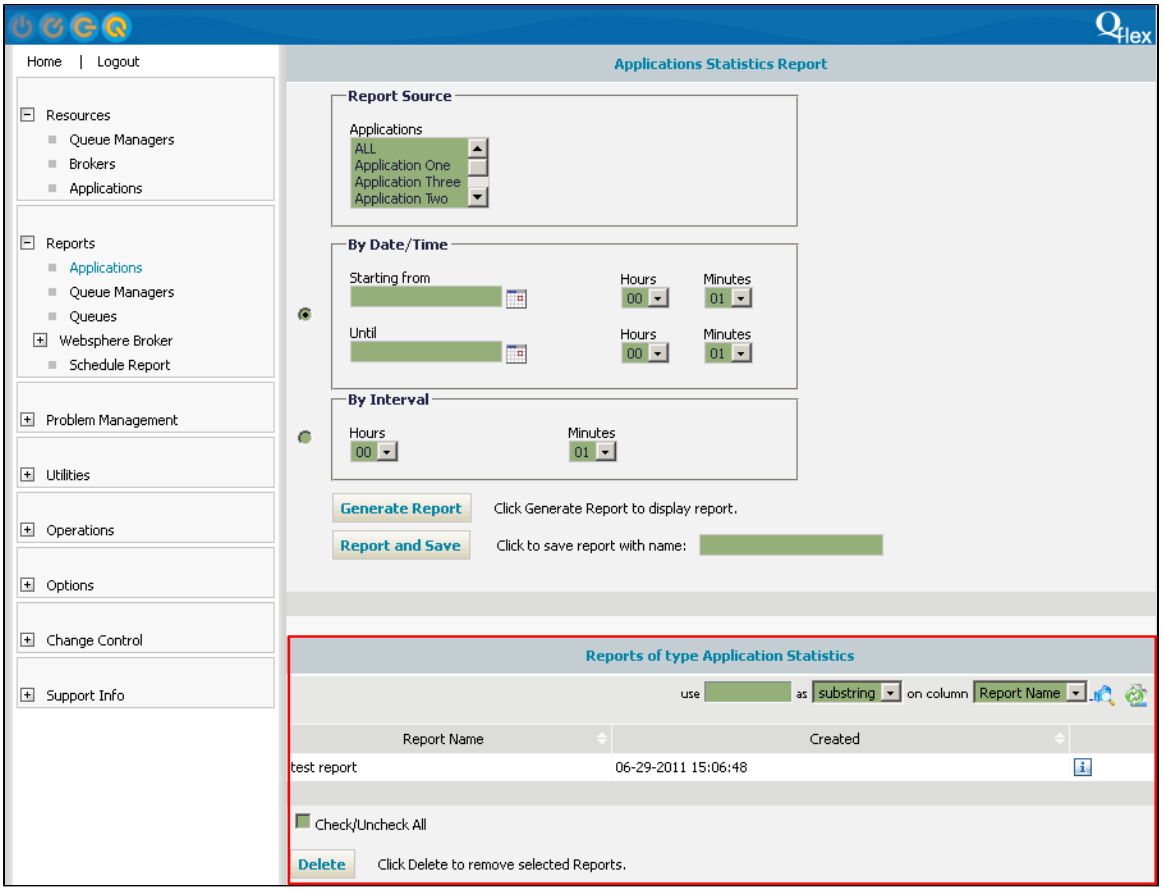


Parameter Name	Purpose
Report Source	select all existing or specific application source.
By Date/Time	calendar time of start and end with indication of hours and minutes, if necessary.
By interval	time period in hours and minutes.

If you press ***Generate Report*** button the report will be displayed in a new page:



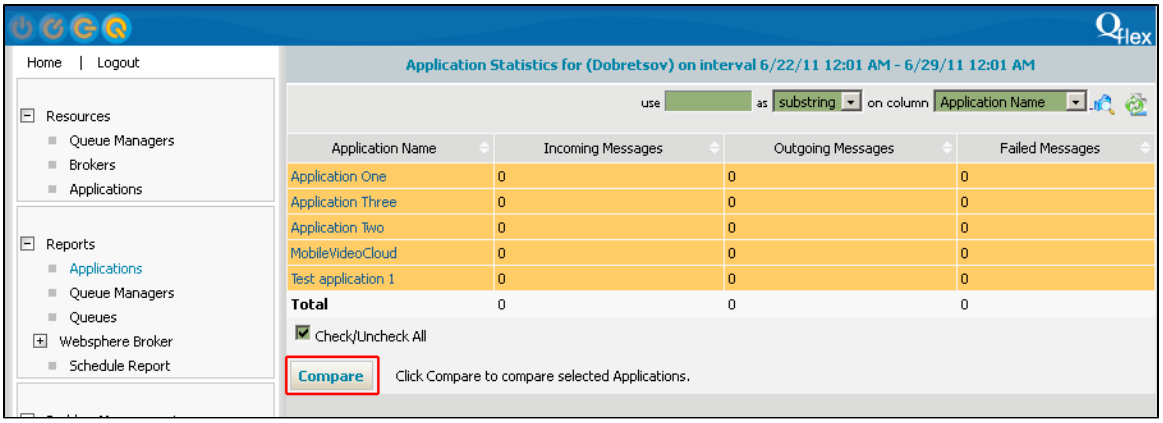
If you want to save report for further use, then indicate its name and press ***Report and Save*** button. The report will be displayed in a new page and when you go back to ***Applications*** it will be shown in ***Reports of type Application Statistics*** section in the bottom of the main page:



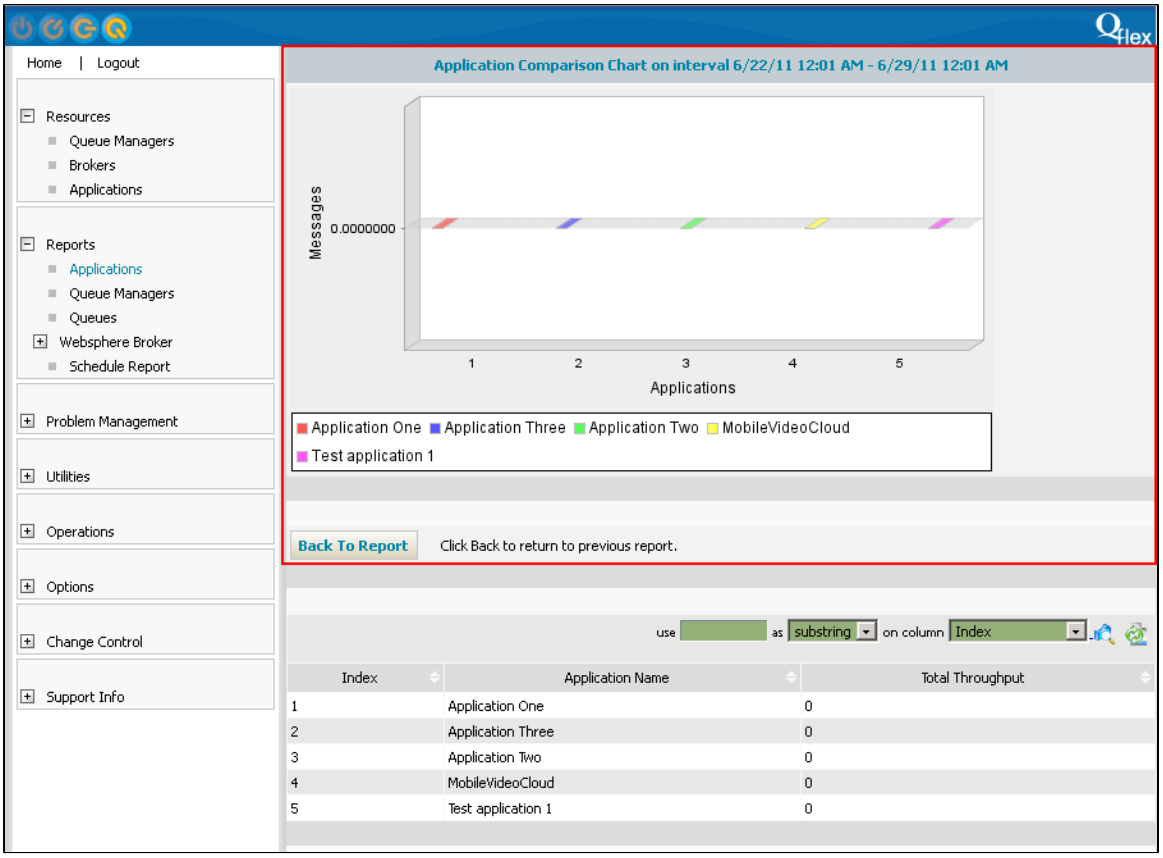
To remove a report first select it and then press ***Delete*** button.

2.2.1.2 Comparing reports

To view compared reports select them from the list and press ***Compare*** button:



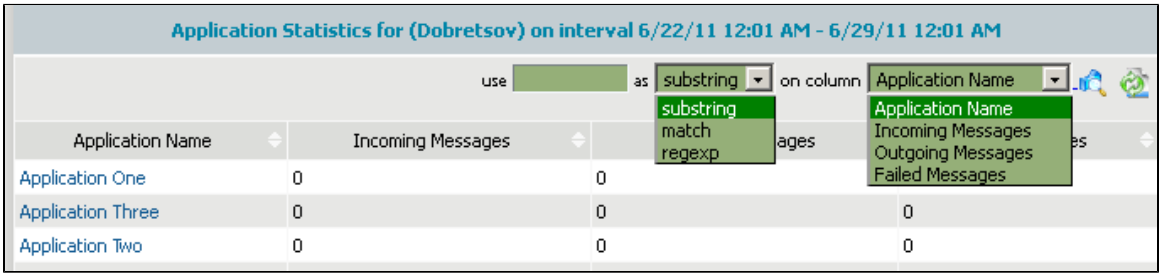
Application Comparison Chart will appear with results of comparison:



To go back to previous page press ***Back To Report*** button.

2.2.1.3 Using sorting filter

You can use sorting filter on top of the list if you need to find a specific type of application statistics or reports:



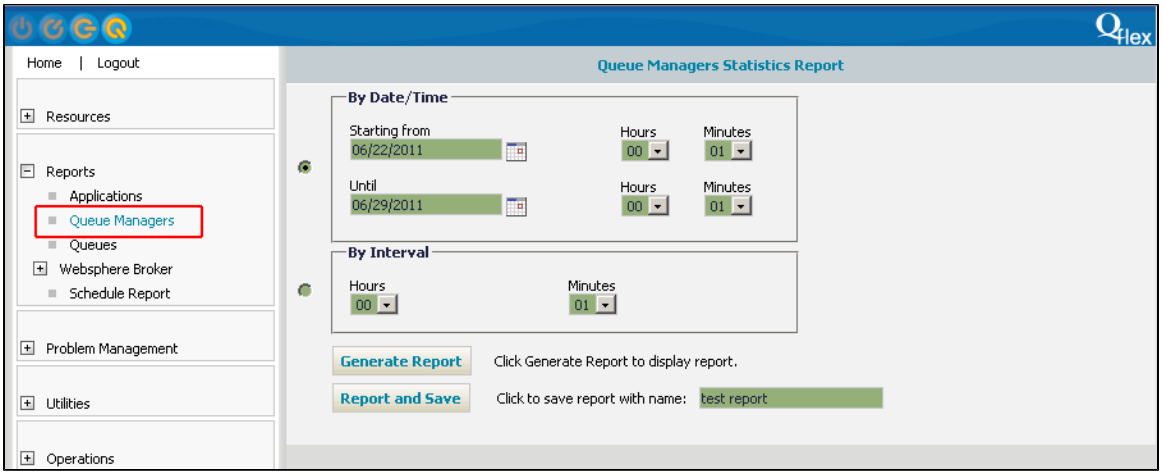
Press ***Search*** button to initiate search process or ***Refresh*** button to reload the data.

2.2.2 Queue Managers

Qex allows viewing performance data on queue managers that had been added to Qex. In order to view the performance data, ensure that you have set up a Data Collection Policy and it was started in the Operations Console. This section shows how to create reports for Queue Managers, compare them and use sorting filter.

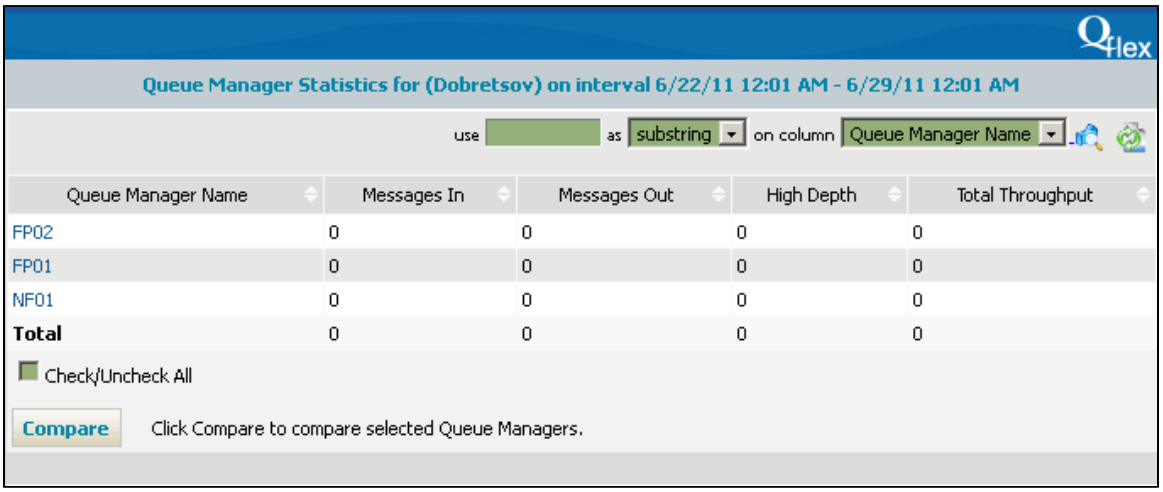
2.2.2.1 Creating reports for Queue Managers

Go to ***Reports*** and click on ***Queue Managers*** to create statistics report. ***Queue Managers Statistics Report*** page will appear where you can set the following data:



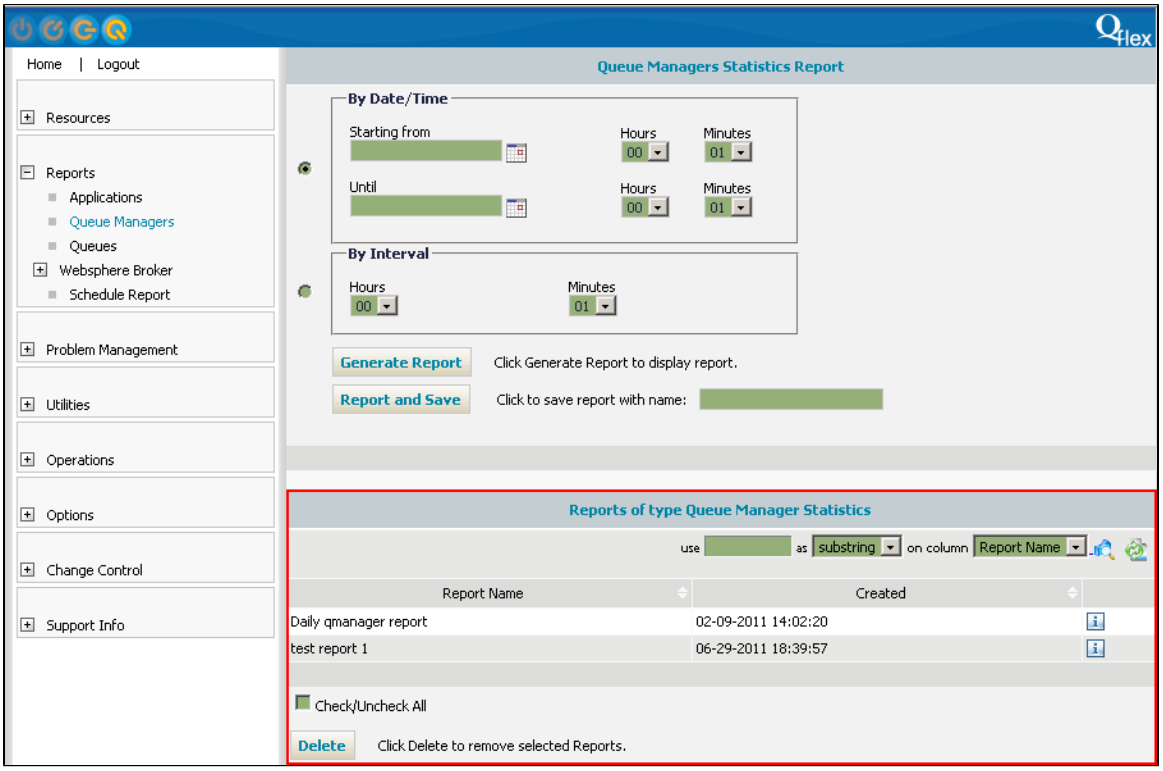
Parameter Name	Purpose
By Date/Time	calendar time of start and end with indication of hours and minutes, if necessary.
By interval	time period in hours and minutes. If you selected type of report By Interval, clicking on refresh will refresh the report for last X minutes that you have selected, starting from current time, not the time report was generated.

If you press ***Generate Report*** button the report will be displayed in a new page:



Parameter Name	Purpose
Messages In	shows how many messages had been PUT on the queue during the interval.
Messages Out	column shows how many messages were removed from the queue either using MQGET or CLEAR commands.
High Depth	shows maximum depth of the queue that had been reached during that interval.
Total Throughput	is an arithmetic expression of Messages In + Messages Out.

If you want to save report for further use, then type in its name and press ***Report and Save*** button. The report will be displayed in a new page and when you go back to ***Queue Managers*** it will be shown in ***Reports of type Queue Managers Statistics*** section in the bottom of the main page:

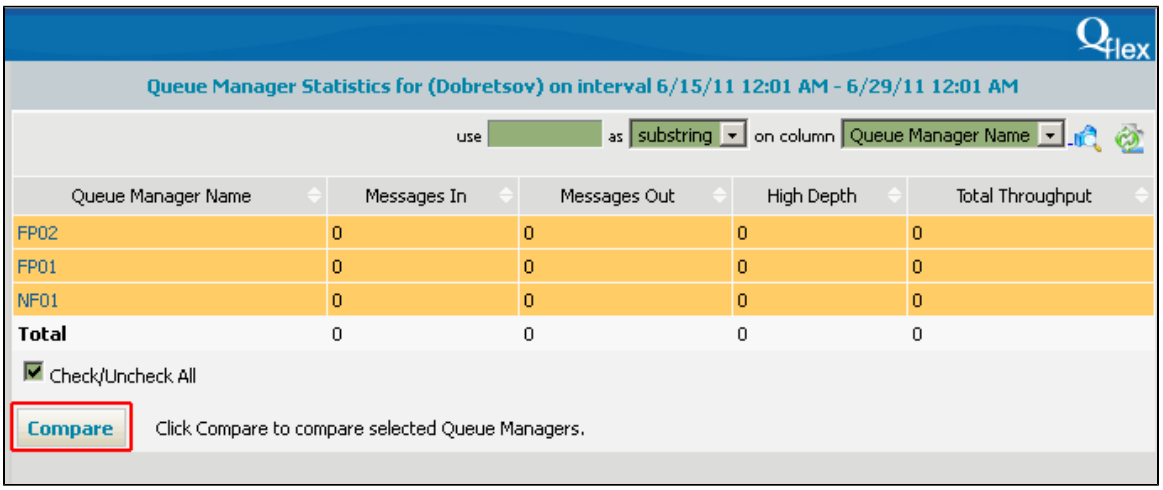


To remove a report first select it and then press ***Delete*** button.

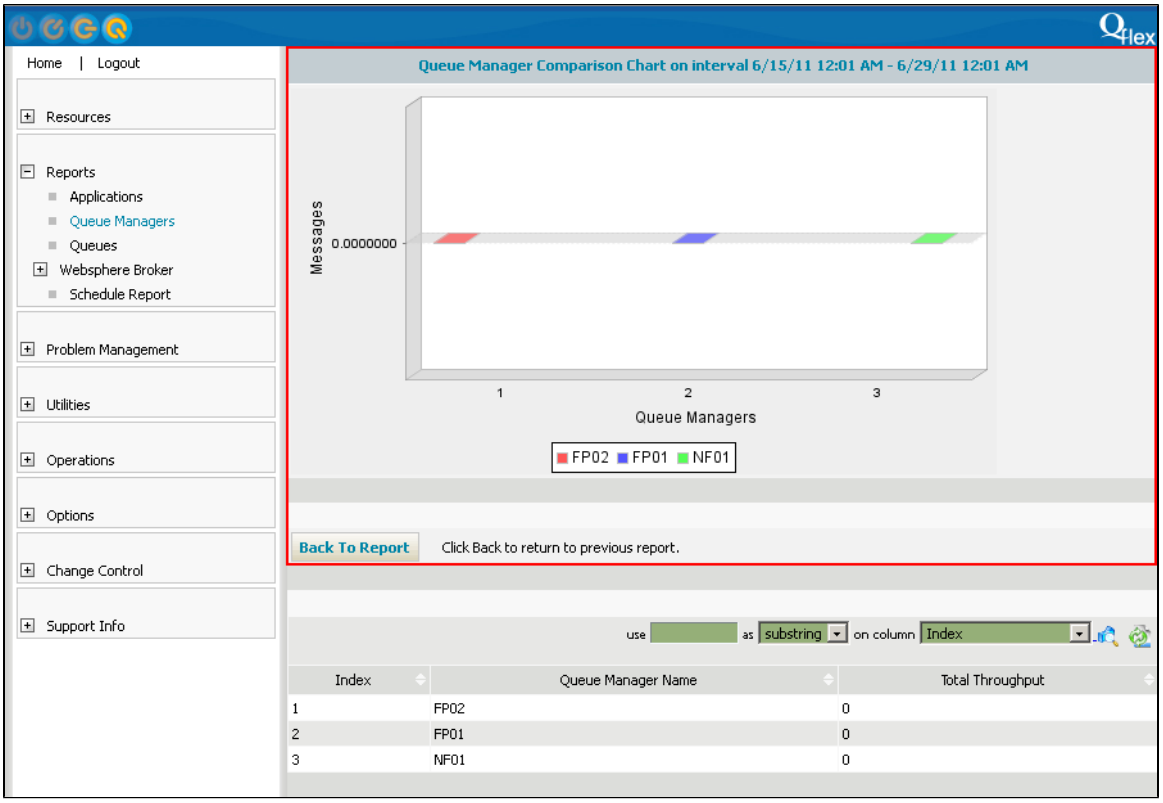
> **Note**
> All the way at the bottom of the screen there is Idleness Report. Idleness Report shows times during which collection could not take place for reasons such as:
>
> - Collection Disabled
> - Queue Manager Not Available.
>
> If Qex was turned off for a period of time, it will show up as Collection Disabled.

2.2.2.2 Comparing reports

To view compared reports select them from the list and press ***Compare*** button:



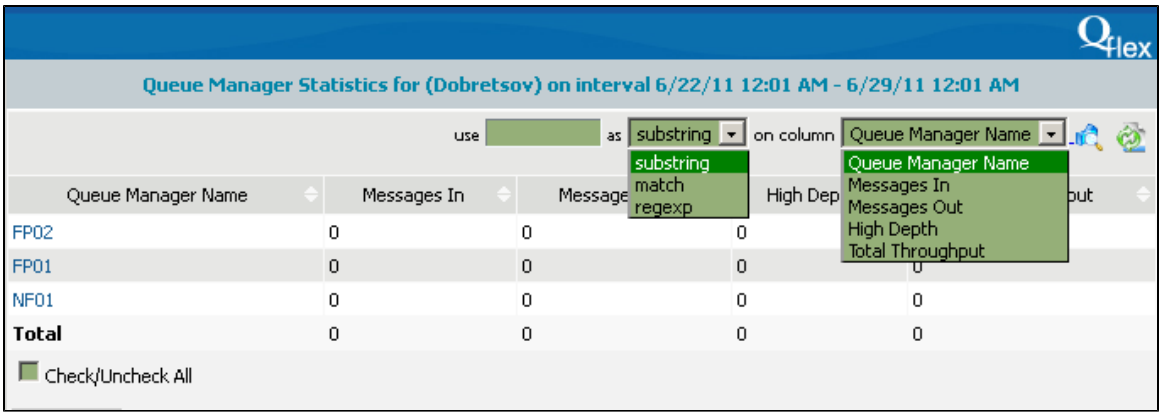
Queue Manager Comparison Chart will appear with results of comparison:



To go back to previous page press ***Back To Report*** button.

2.2.2.3 Using sorting filter

You can use sorting filter on top of the list if you need to find a specific type of queue manager statistics or reports:



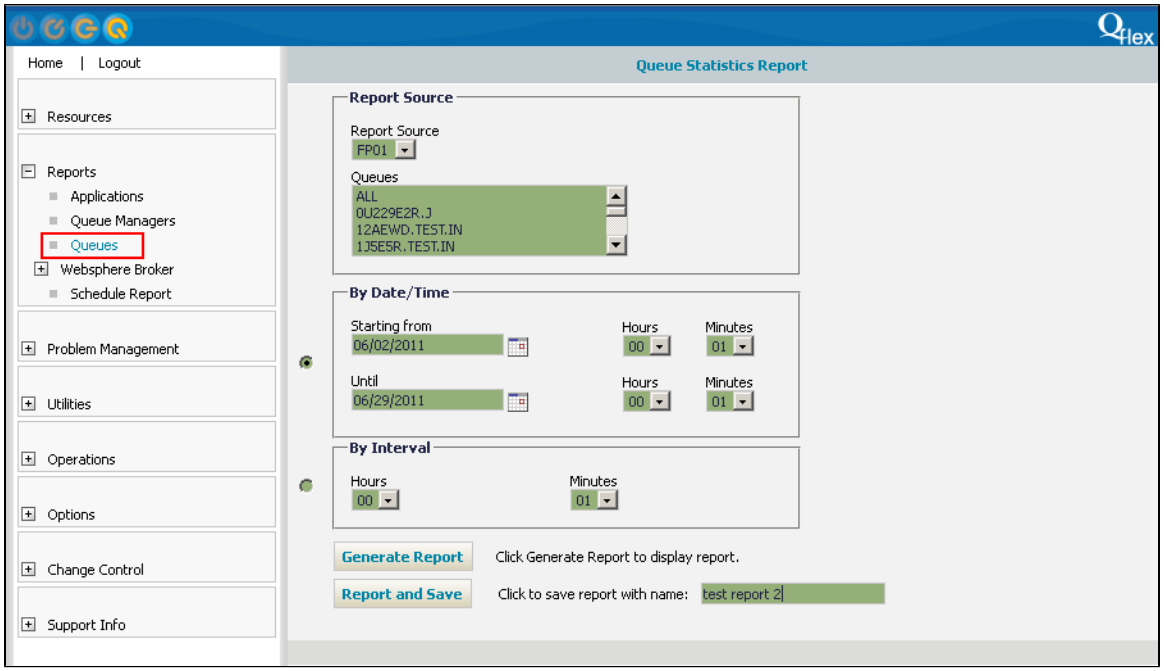
Press ***Search*** button to initiate search process or ***Refresh*** button to reload the data.

2.2.3 Queues

Reports can be viewed at the Queue for a specic Queue Manager or at the Queue Managers Level. At the queue level, you will be able to see statistics for all queues for a particular interval in time. At the queue manager level, you will be able to see the total statistics for each queue manager.

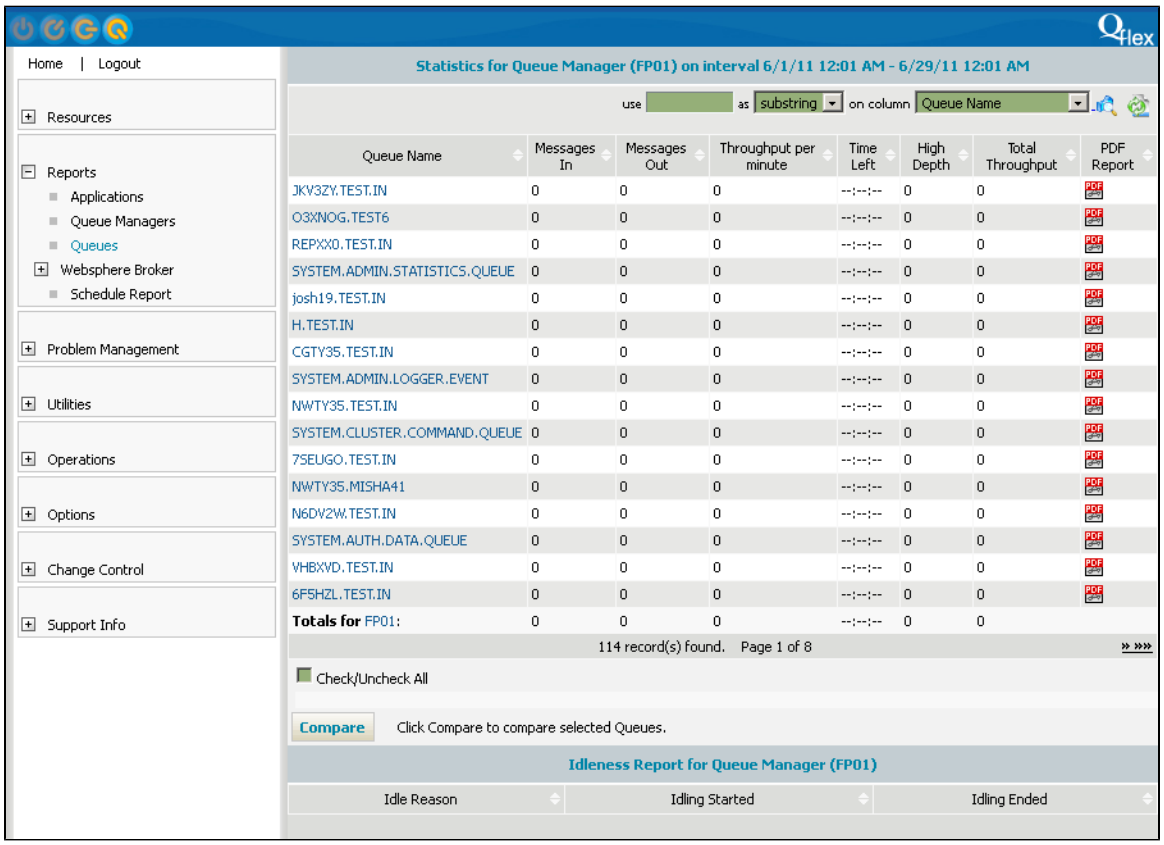
2.2.3.1 Creating reports for Queues

Go to ***Reports*** and click on ***Queues*** to create statistics report. ***Queue Statistics Report*** page will appear where you can set the following data:



Parameter Name	Purpose
Report Source	select all existing or specific queue source.
By Date/Time	calendar time of start and end with indication of hours and minutes, if necessary.
By interval	time period in hours and minutes.

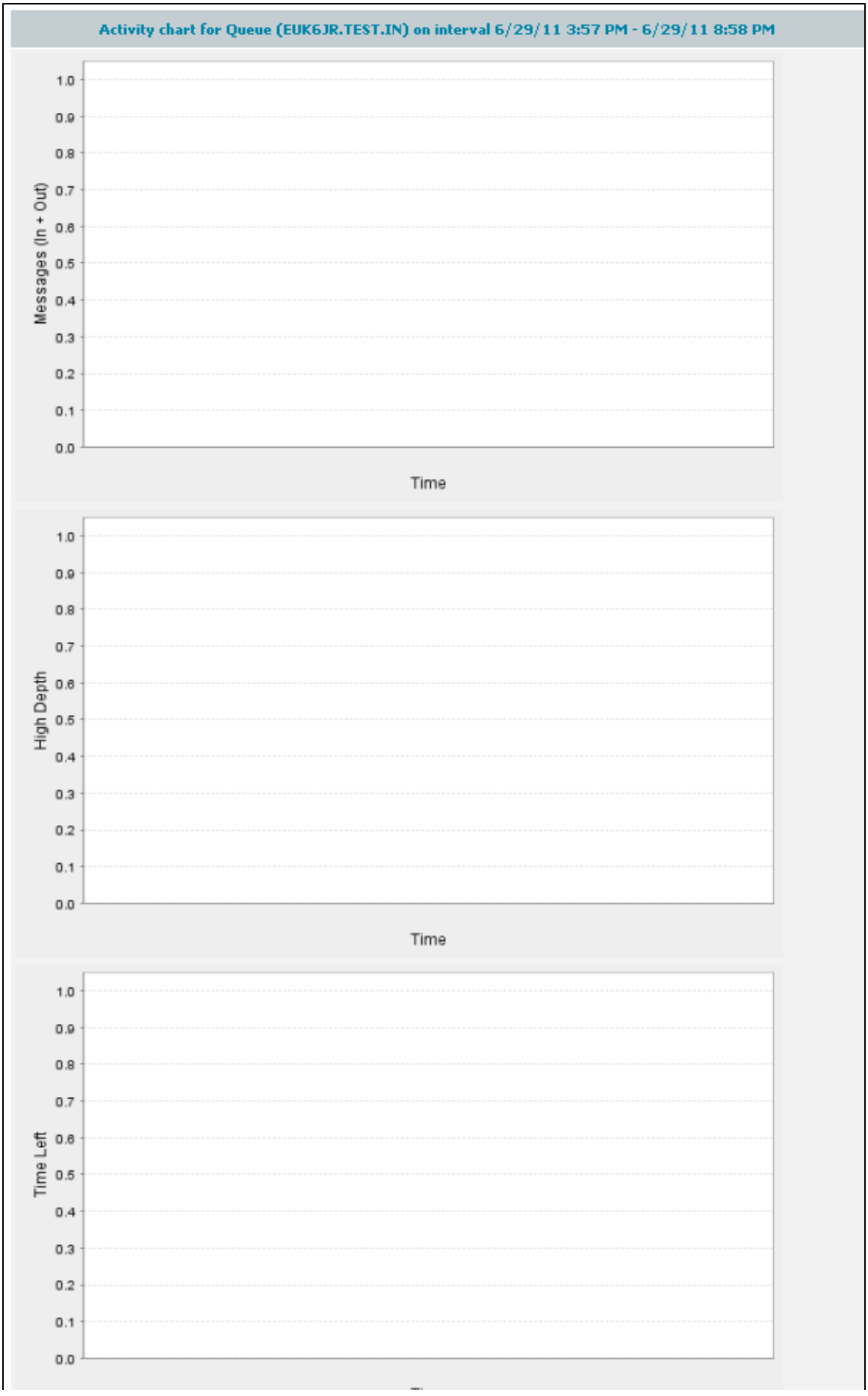
If you press ***Generate Report*** button the report will be displayed in a new page:

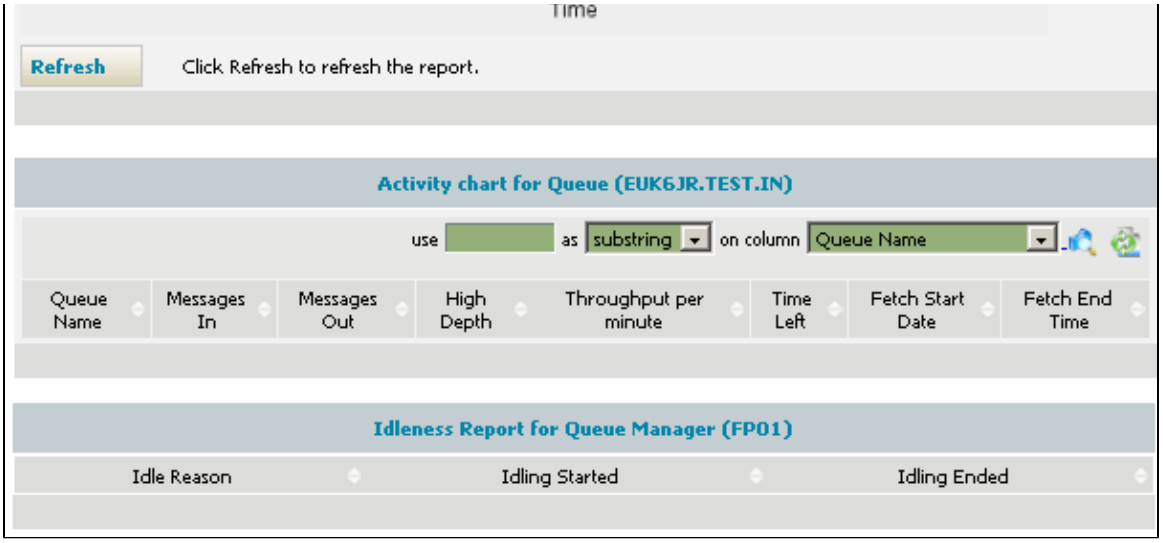


Click on PDF icon to view report in .pdf format.

2.2.3.2 Viewing data on queue

To see detailed data about a specic queue, click on the queue name in ***Statistics for Queue Manager*** page. Several charts depicting detailed queue statistics will be presented as well as textual representation of the graphical data:


Activity chart for Queue (EUK6JR.TEST.IN) on interval 6/29/11 3:57 PM - 6/29/11 8:58 PM
Messages (In + Out)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Time
High Depth
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Time
Time Left
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0



All the way at the bottom of the screen there is Idleness Report. Idleness Report shows times during which collection could not take place for reasons such as:

- Collection Disabled
- Queue Manager Not Available.

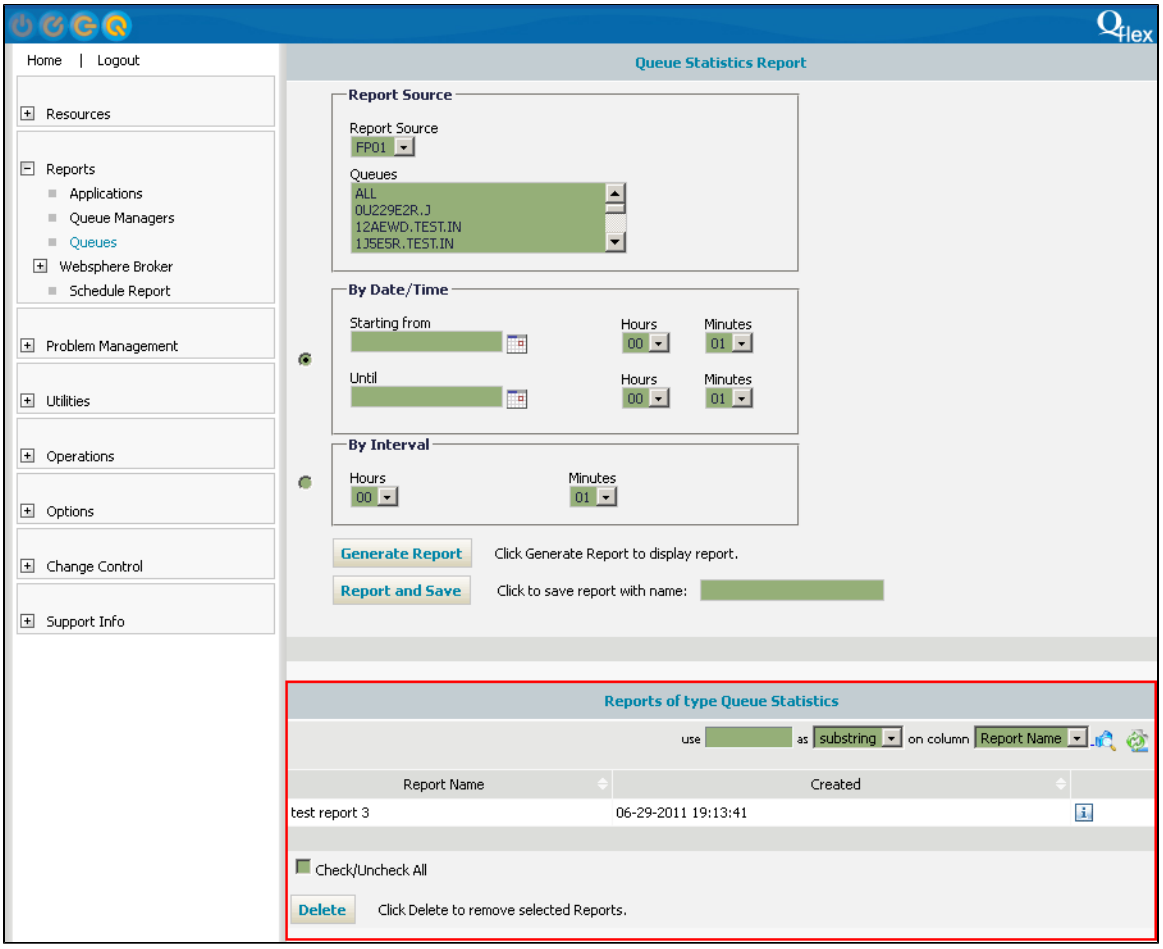
If Qex was turned off for a period of time, it will show up as Collection Disabled.

Note
Use textual data to see precise interval times for performance data.

Under following condition textual data will not match graphical charts: if you specied an interval for which performance records are placed OUTSIDE the interval, the data will not be presented graphically however it will be presented in text form.

Example. There are two time-adjacent performance records. Record A shows all the performance data from January 1st to February 1st 12AM. Record B shows all the performance data from February 1st 12:01 AM to February 1st 3AM. If you select to see all the data from February 1st 10AM or 3AM, the chart will not be able to scale in a meaningful way so such data is not displayed graphically, however it is available in textual format.

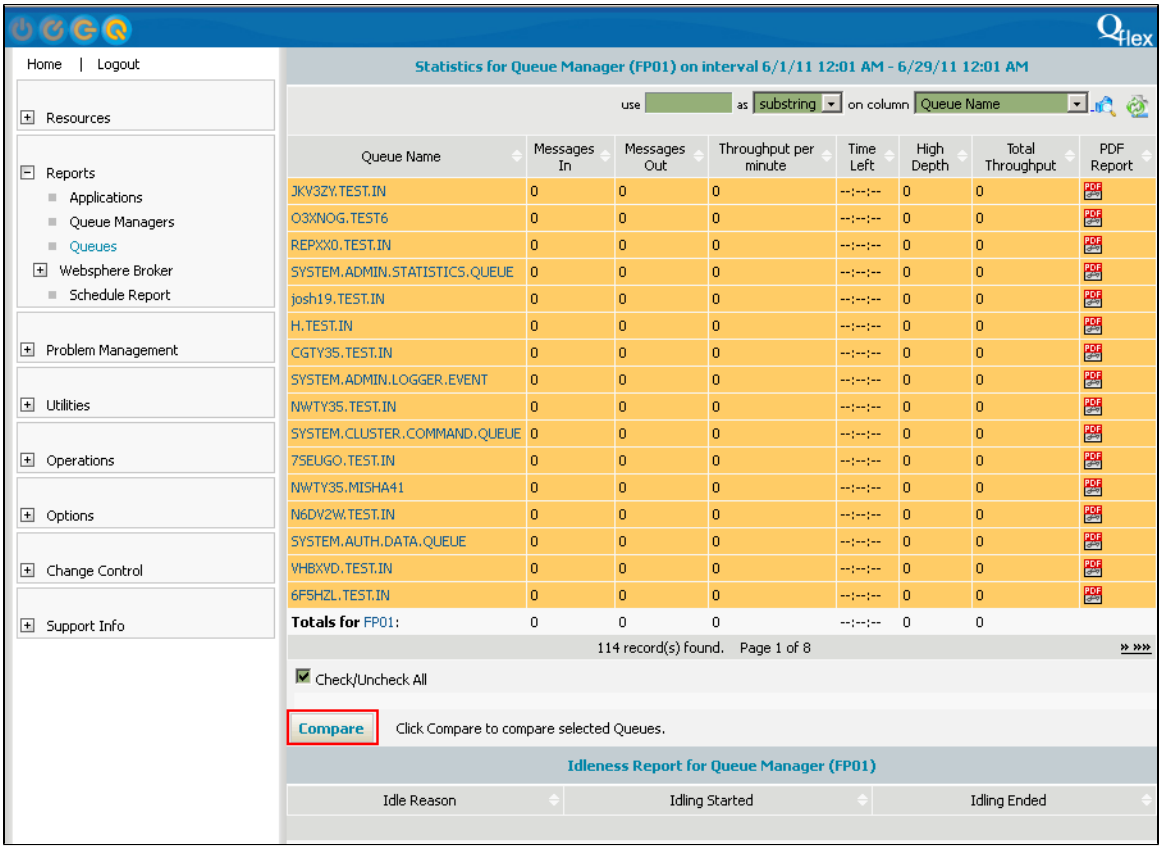
If you want to save report for further use, then indicate its name and press ***Report and Save*** button.The report will be displayed in a new page and when you go back to ***Queues*** it will be shown in ***Reports of type Queue Statistics*** section in the bottom of the main page:



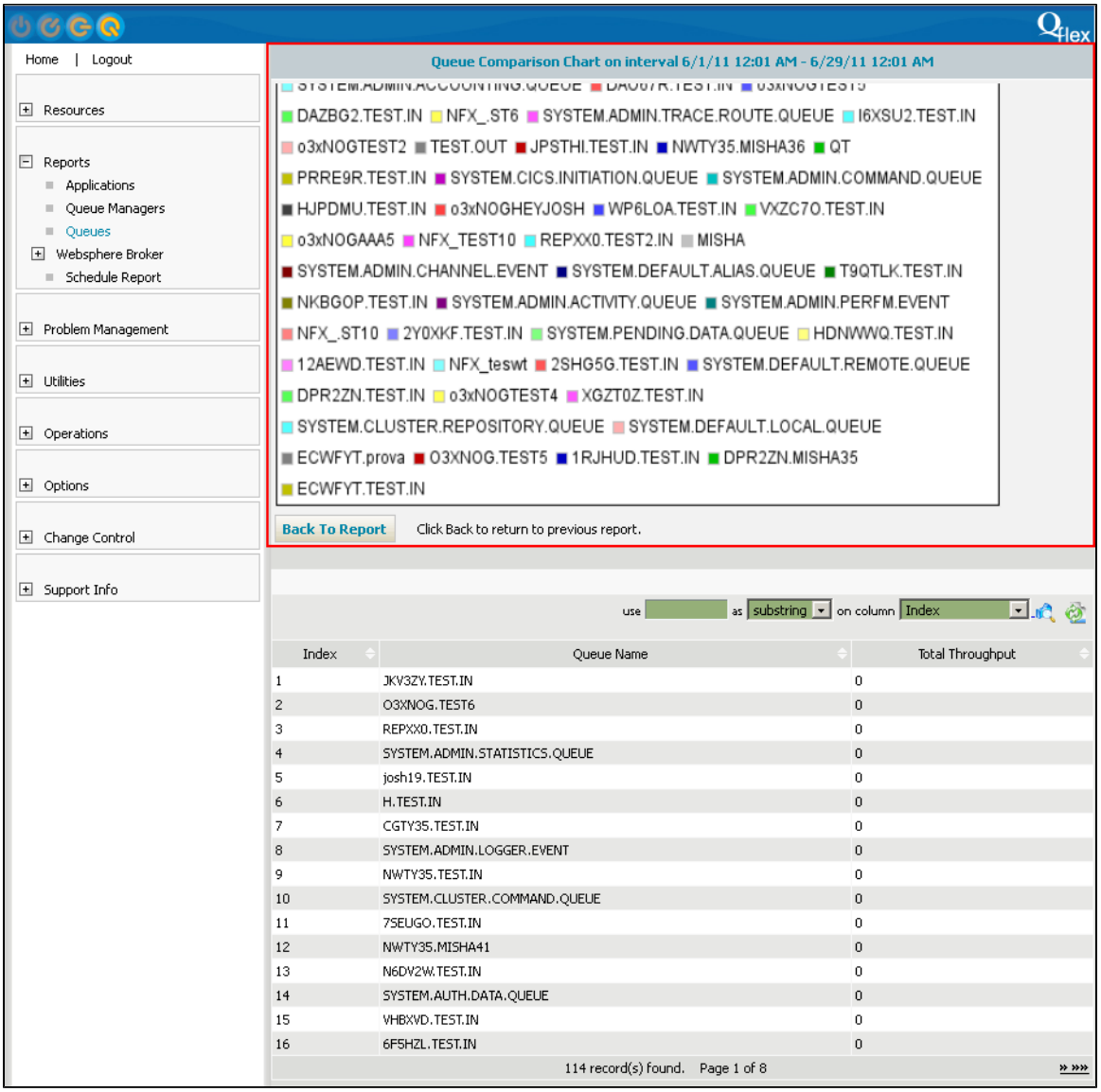
To remove a report first select it and then press ***Delete*** button.

2.2.3.3 Comparing reports

To view compared reports select them from the list and press ***Compare*** button:



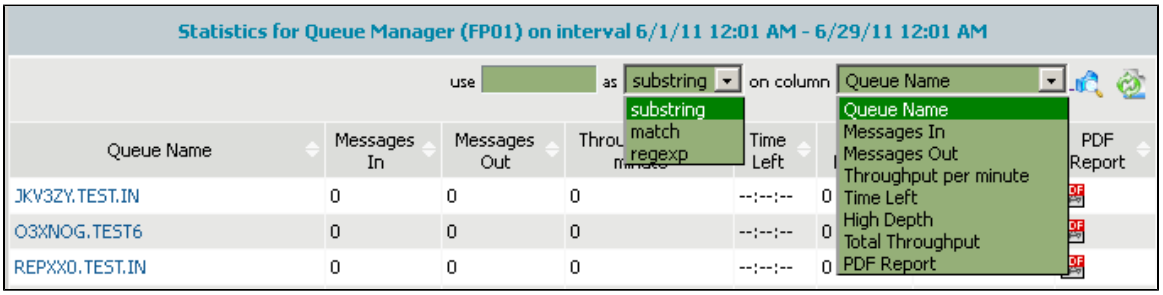
Queue Comparison Chart will appear with results of comparison:



To go back to previous page press ***Back To Report*** button.

2.2.3.4 Using sorting filter

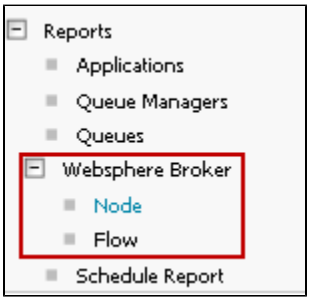
You can use sorting filter on top of the list if you need to find a specific type of queue statistics or reports:



Press ***Search*** button to initiate search process or ***Refresh*** button to reload the data.

2.2.4 Websphere Broker

Click on ***Node*** to view statistics on a specific Node and ***Flow*** if you need to view report on a flow:

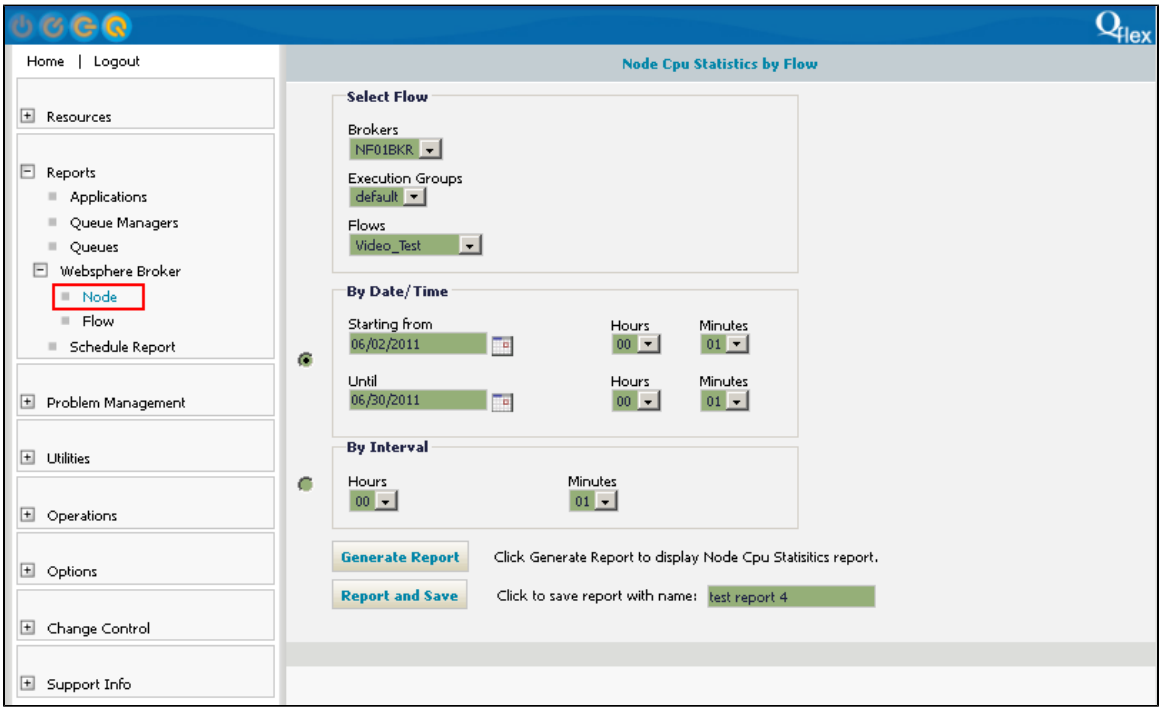


2.2.4.1 Node

This section shows how to create reports for a node, view data on it and use sort filter.

2.2.4.1.1 Creating reports for a node

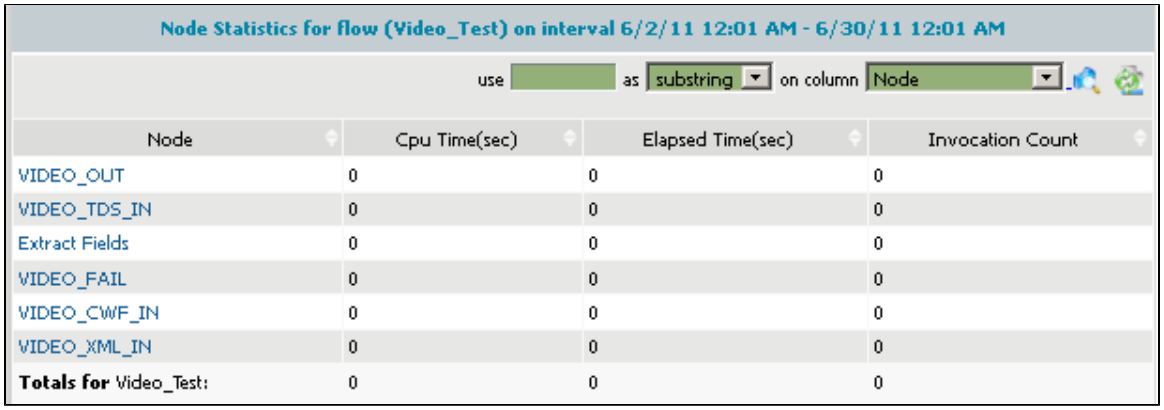
To create broker report for node go to ***Reports->Websphere Broker*** and click on ***Node***. ***Node Cpu Statistics by Flow*** page will appear where you can set the following data:



In the ***Select Flow*** section you can select from dropdown menu ***Brokers, Execution Groups*** and ***Flows***.

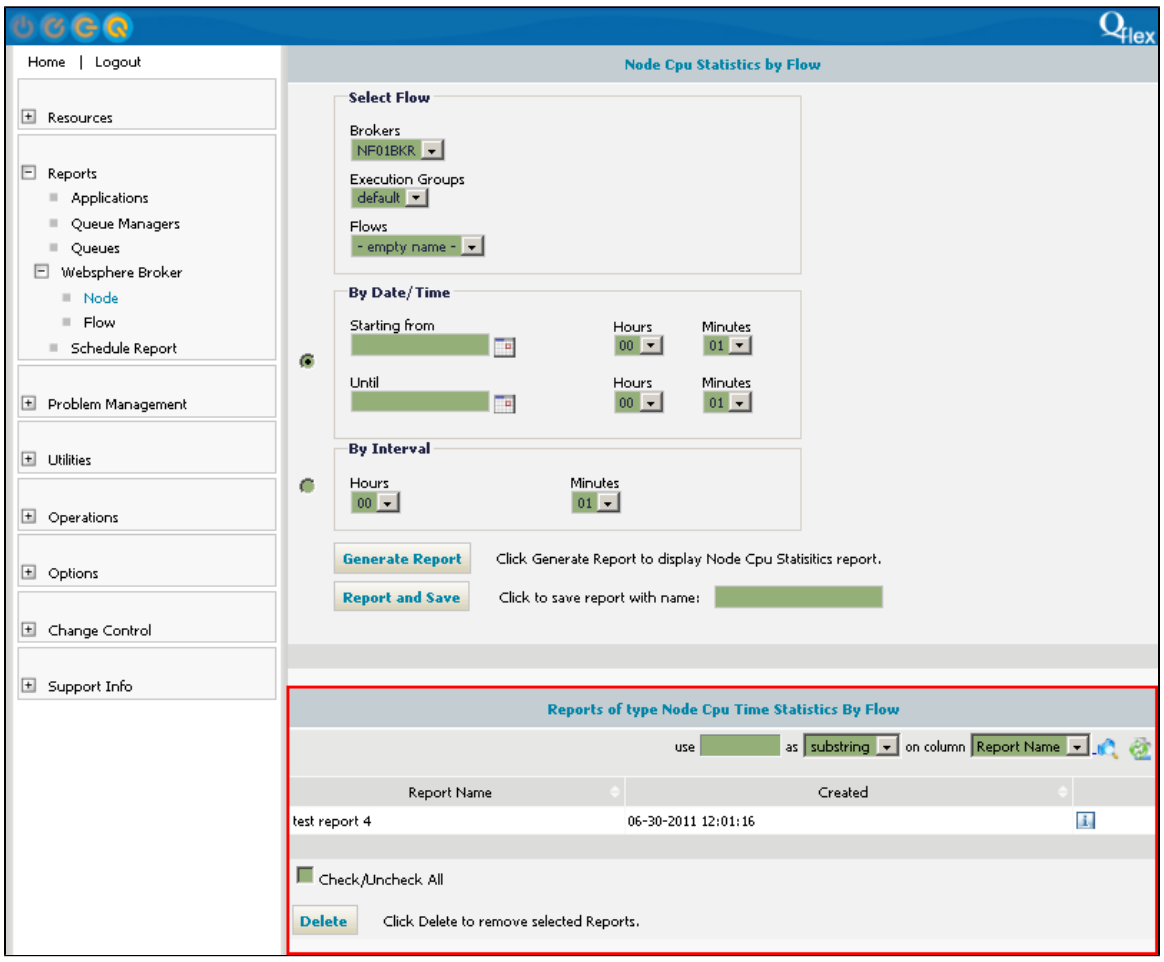
Parameter Name	Purpose
By Date/Time	calendar time of start and end with indication of hours and minutes, if necessary.
By interval	time period in hours and minutes. If you selected type of report ***By Interval***, clicking on refresh will refresh the report for last X minutes that you have selected, starting from current time, not the time report was generated

If you press ***Generate Report*** button the report will be displayed in a new page:



Parameter Name	Purpose
Cpu Time(sec)	Number of seconds CPU was executing the node's logic
Elapsed Time(sec)	Total time it took from message entering till message exiting the node
Invocation Count	Number of times node was called

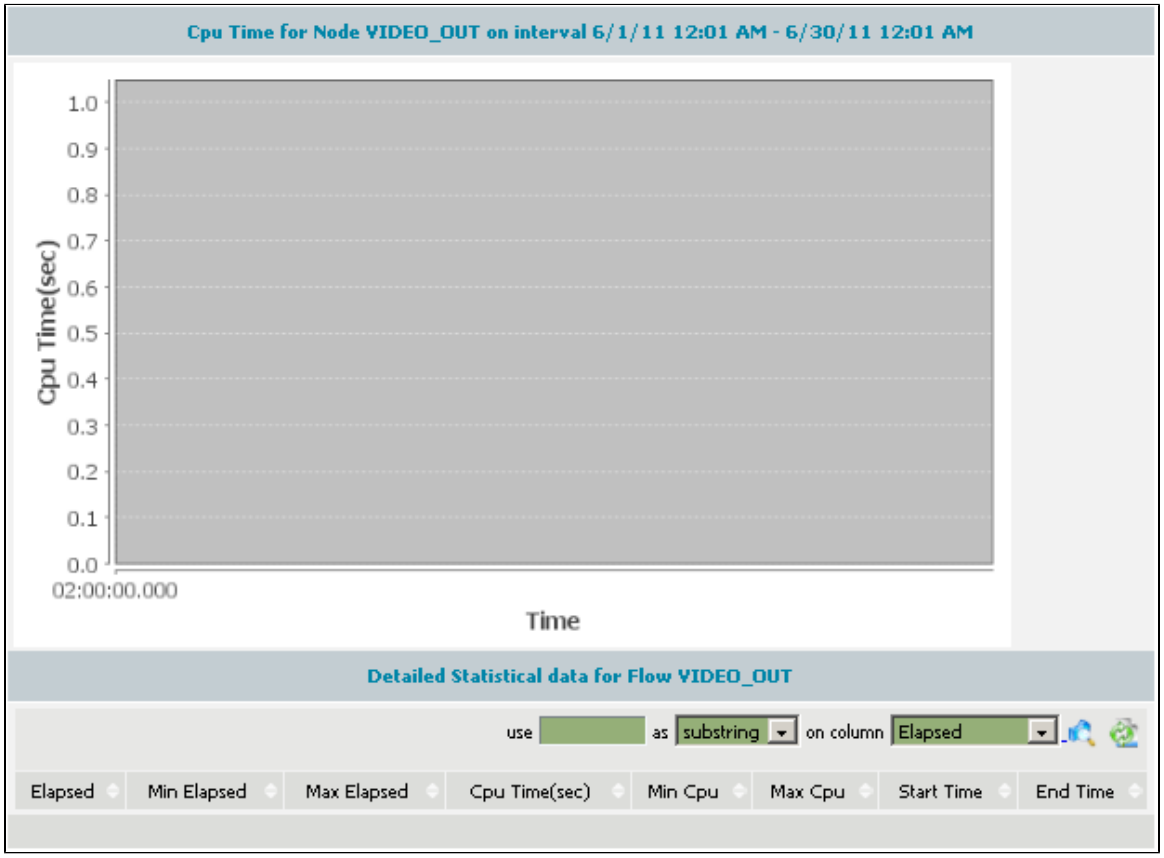
If you want to save report for further use, then type in its name and press ***Report and Save*** button. The report will be displayed in a new page and when you go back to ***Node page*** it will be shown in ***Reports of type Node Cpu Time Statistics By Flow*** section in the bottom of the main page:



To remove a report first select it and then press ***Delete*** button.

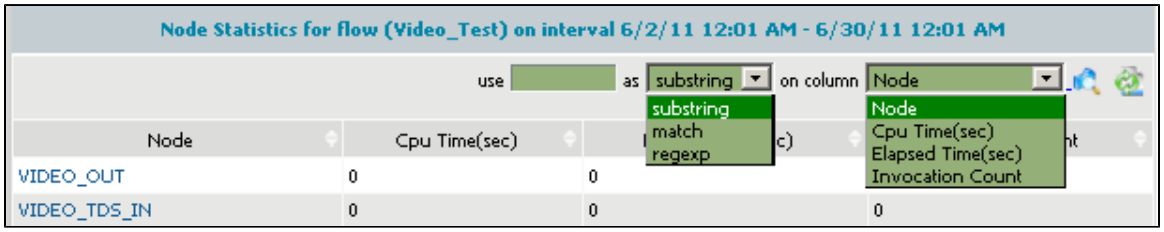
2.2.4.1.2 Viewing data on node

To see detailed data about a specic node, click on the node name in ***Node Statistics for flow*** page. Several charts depicting detailed queue statistics will be presented as well as textual representation of the graphical data:



2.2.4.1.3 Using sorting filter

You can use sorting filter on top of the list if you need to find a specific type of node statistics or reports:



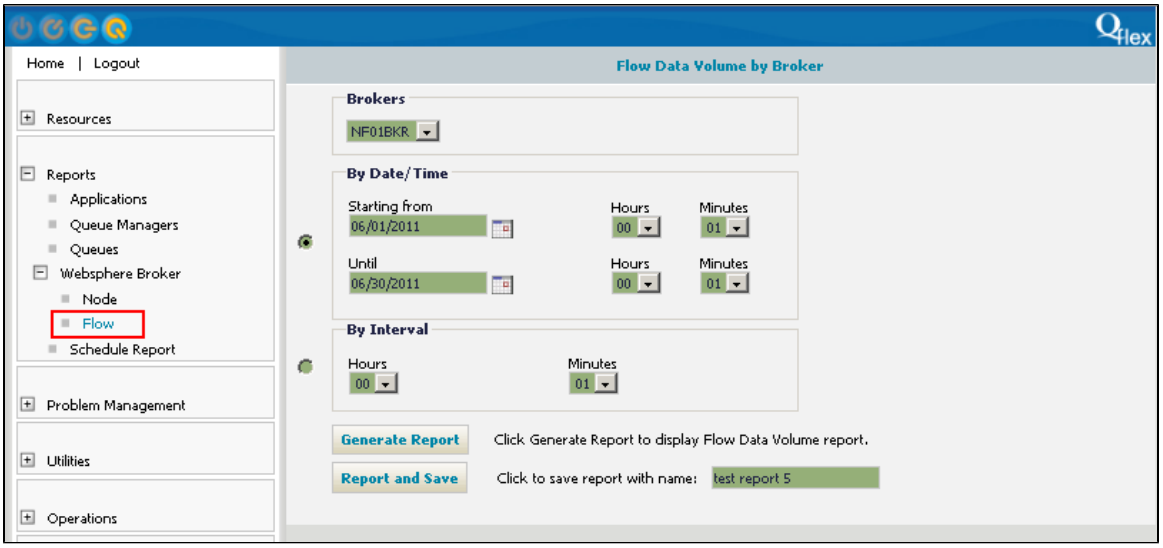
Press ***Search*** button to initiate search process or ***Refresh*** button to reload the data.

2.2.4.2 Flow

This section shows how to create reports for Flow, view data on it and use search filter.

2.2.4.2.1 Creating reports for Flow

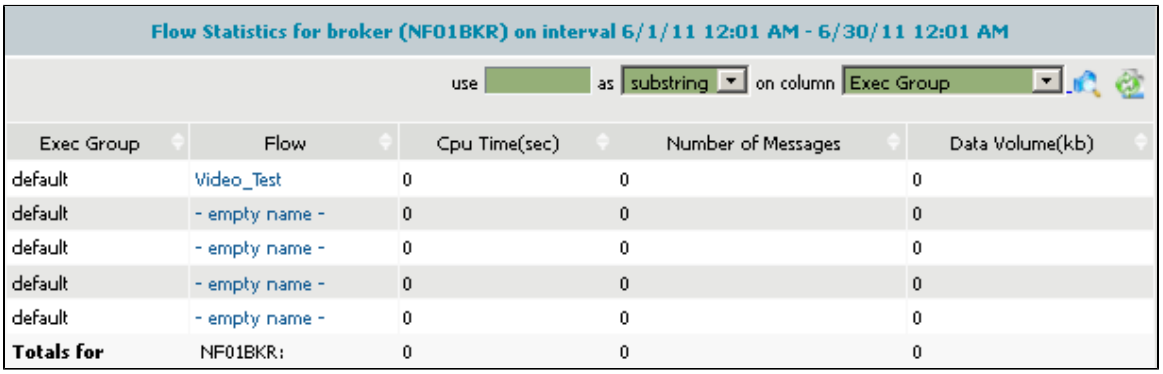
To create broker report for a flow go to ***Reports->Websphere Broker*** and click on ***Flow***. ***Flow Data Volume by Broker*** page will appear where you can set the following data:



Use ***Brokers*** drop down menu to set broker for report generation.

Parameter Name	Purpose
By Date/Time	calendar time of start and end with indication of hours and minutes, if necessary.
By interval	time period in hours and minutes. If you selected type of report ***By Interval***, clicking on refresh will refresh the report for last X minutes that you have selected, starting from current time, not the time report was generated.

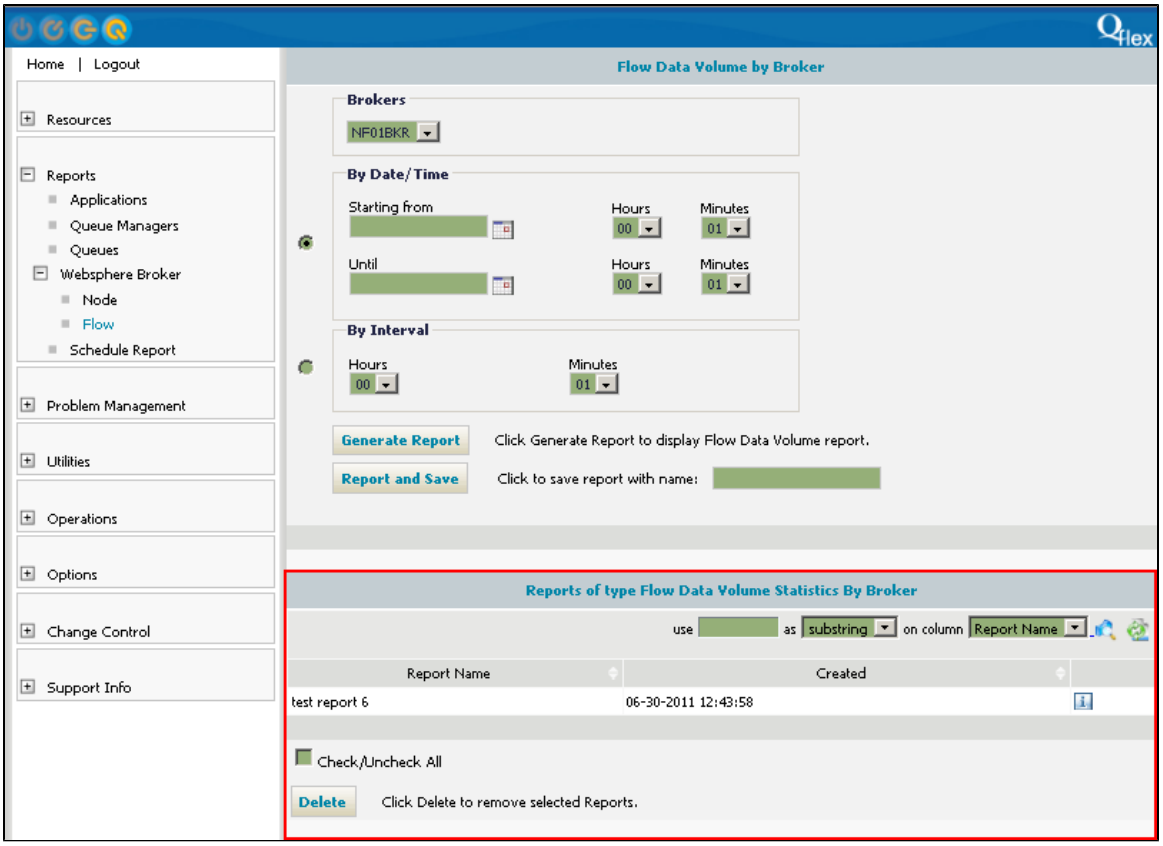
If you press ***Generate Report*** button the report will be displayed in a new page:



Exec Group	Flow	Cpu Time(sec)	Number of Messages	Data Volume(kb)
default	Video_Test	0	0	0
default	- empty name -	0	0	0
default	- empty name -	0	0	0
default	- empty name -	0	0	0
default	- empty name -	0	0	0
Totals for	NF01BKR:	0	0	0

Parameter Name	Purpose
Exec Group	Execution Group Name
Flow	Flow Name
Cpu Time(sec)	Number of seconds was spent in CPU to execute entire flow
Number of messages	Number of messages that went through the flow
Data Volume(kb)	volume of information in kilobytes.

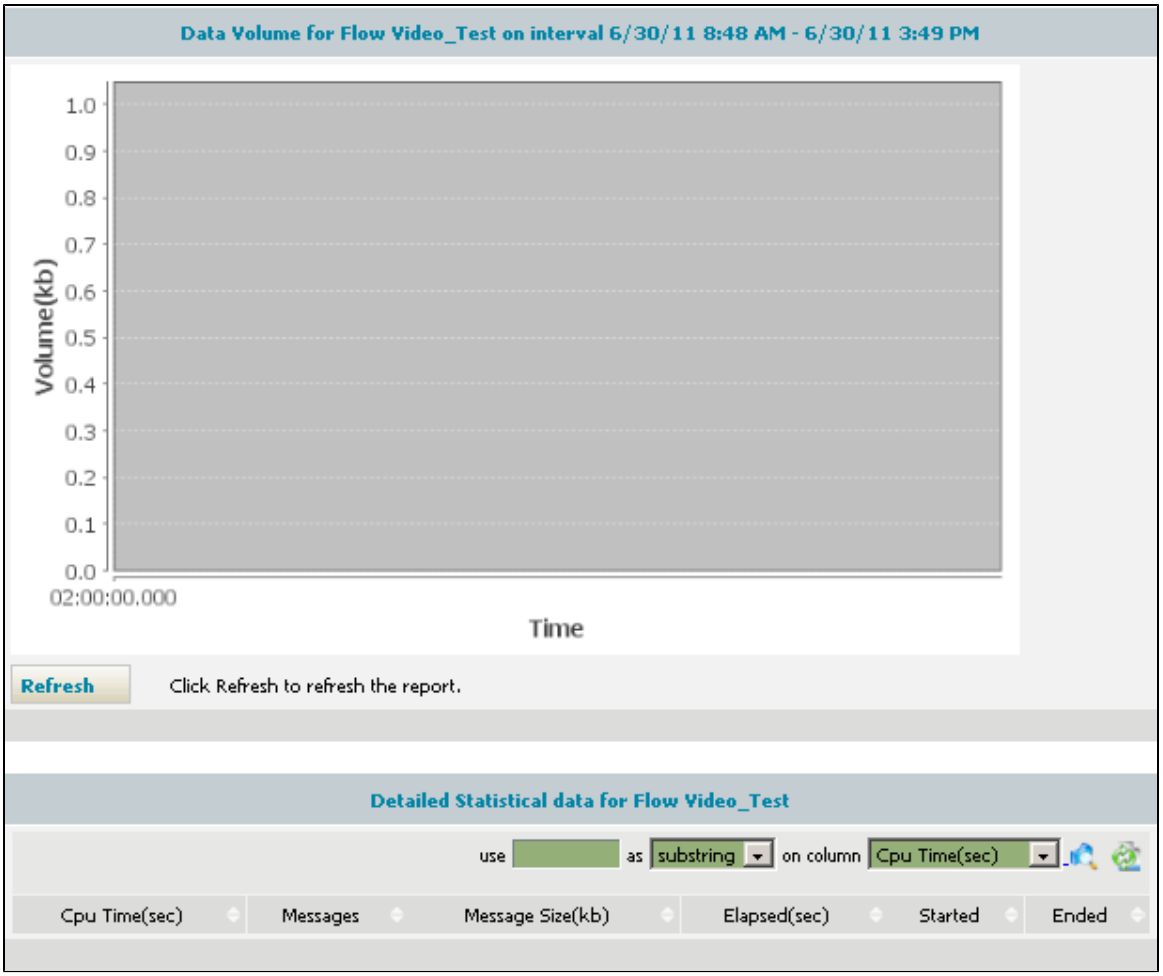
If you want to save report for further use, then type in its name and press ***Report and Save*** button. The report will be displayed in a new page and when you go back to ***Flow page*** it will be shown in ***Reports of type Flow Data Volume Statistics By Broker*** section in the bottom of the main page:



To remove a report first select it and then press ***Delete*** button.

2.2.4.2.2 Viewing data on flow

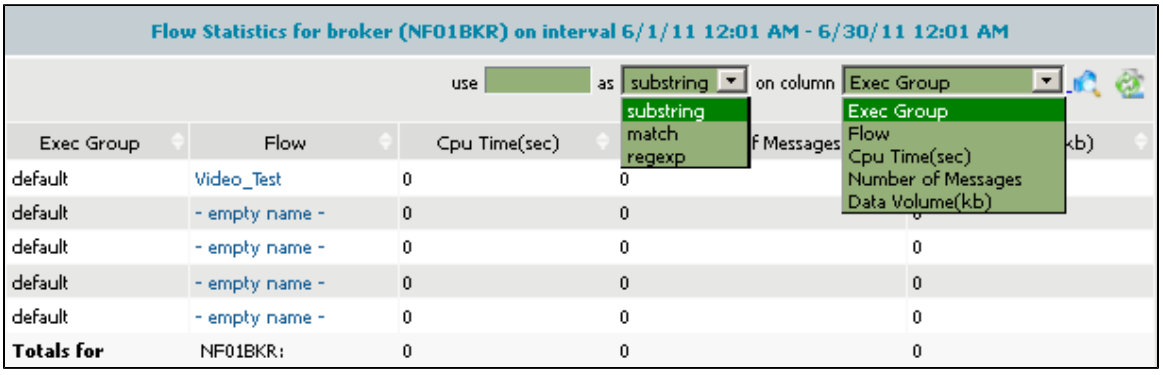
To see detailed data about a specic flow, click on the flow name in ***Flow Statistics for broker*** page. A chart depicting detailed data flow volume will be presented as well as textual representation of the graphical data:



Press ***Refresh*** button to reload the chart and view updated information.

2.2.4.2.3 Using sorting filter

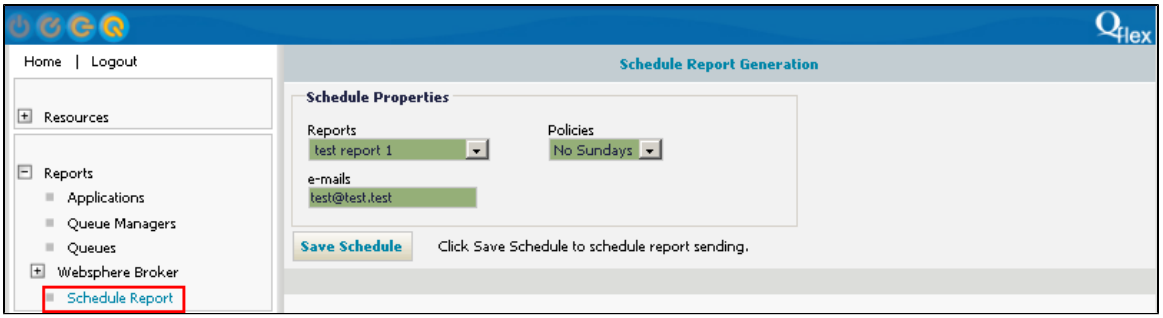
You can use sorting filter on top of the list if you need to find a specific type of flow statistics or reports:



Press ***Search*** button to initiate search process or ***Refresh*** button to reload the data.

2.2.5 Schedule Report

To create automatic report generation go to ***Reports*** and click on ***Schedule Report. Schedule Report Generation*** page will appear where you can set the following data:



Parameter Name	Purpose
Reports	select existing reports from drop down menu.
Policies	select existing cron/polling policy (when or how often to send report). Ensure that you have set one up in Polling Policies.
E-mails	electronic mail addresses where you want the report to be sent. You can use several email addresses separated by semicolon.

2.3 Problem Management

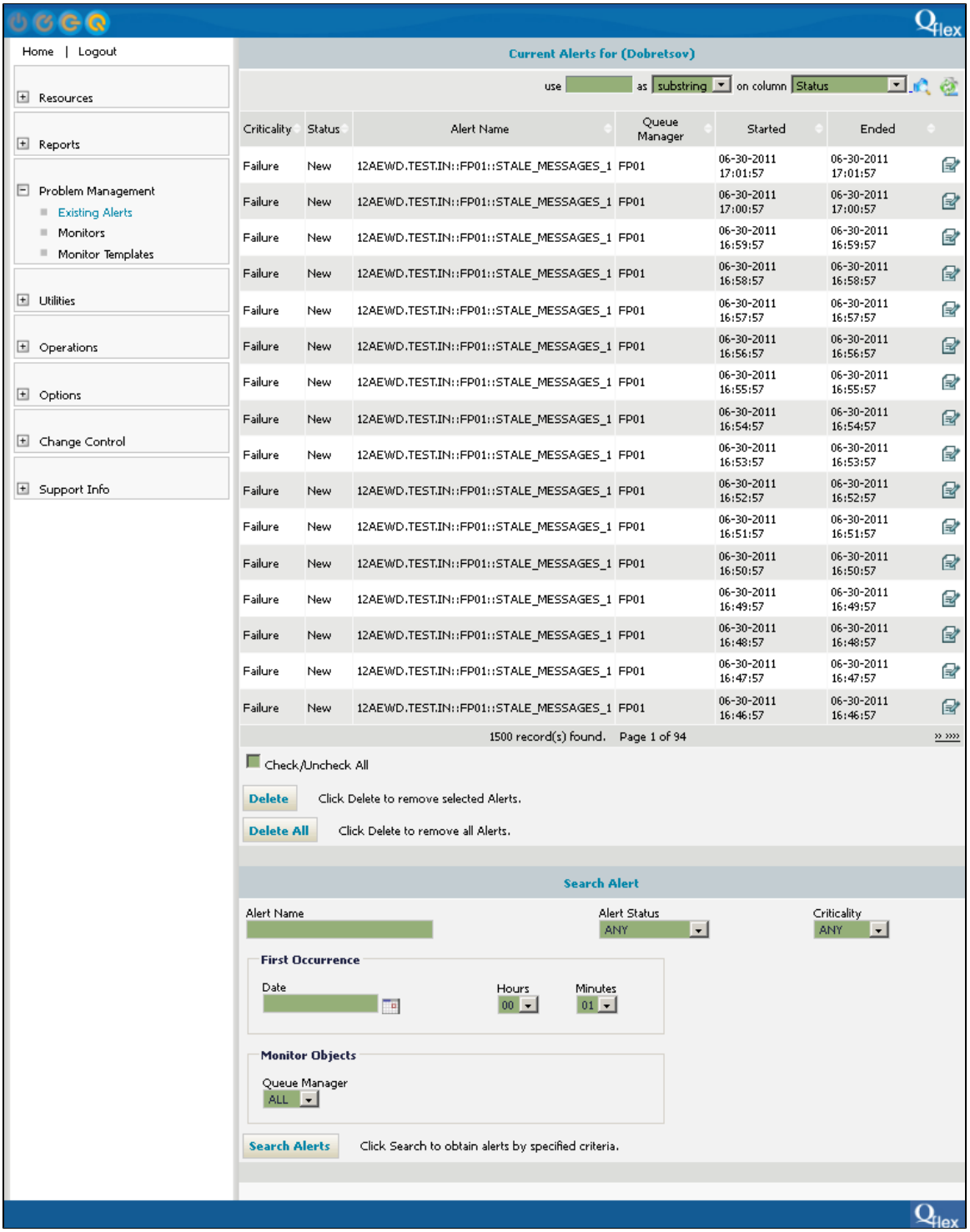
In the ***Problem Management*** section of QFlex you can see ***Existing Alerts, Monitors*** and ***Monitor Templates***.

2.3.1 Existing Alerts

This section shows how to view, search, edit, delete and filter existing alerts.

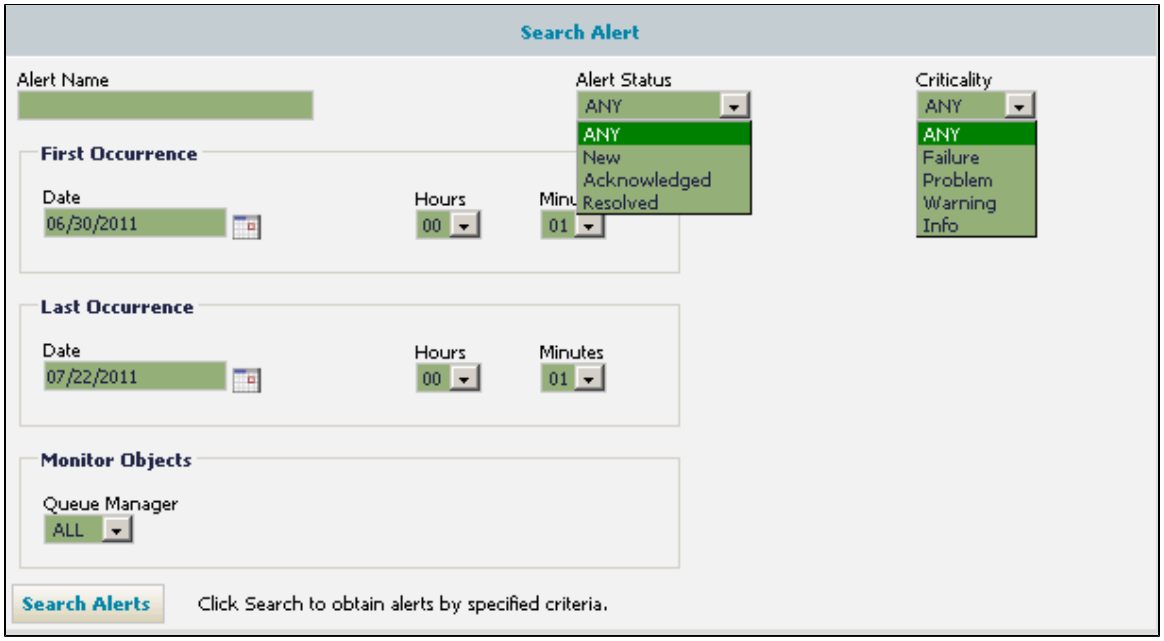
2.3.1.1 Viewing Existing Alerts

See the log of existing alerts, go to ***Problem Management*** and click on ***Existing Alerts***. You will see a list of alarms in the ***Current Alerts*** section:



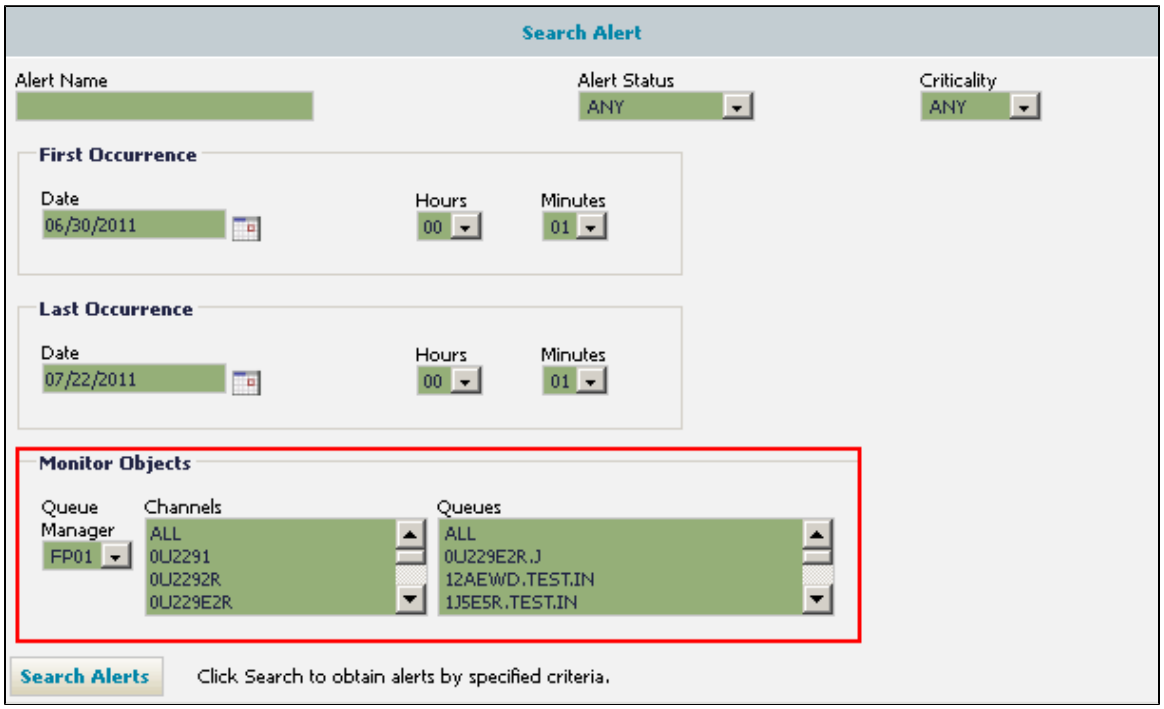
2.3.1.2 Searching for Existing Alerts

To search through the log of existing alerts use ***Search Alert*** section in the bottom, where you can set the following criteria:



Parameter Name	Purpose
Alert Name	title of alert you need to find.
Alert Status	***ANY***, ***New***, ***Acknowledged*** or ***Resolved***.
Criticality	***ANY, Failure, Warning, Problem*** or ***Info***.
First Occurrence	calendar date and time (hours, minutes) when alert first appeared.
Last Occurrence	calendar date and time (hours, minutes) when alert was detected for the last time.
Monitor Objects	***Queue Manager*** objects - ***ALL*** or specific.

If you choose a specific Queue Manager object you can also select ***Channels*** (all, single or several - ctrl+left click) and ***Queues*** (all, single or several - ctrl+left click):

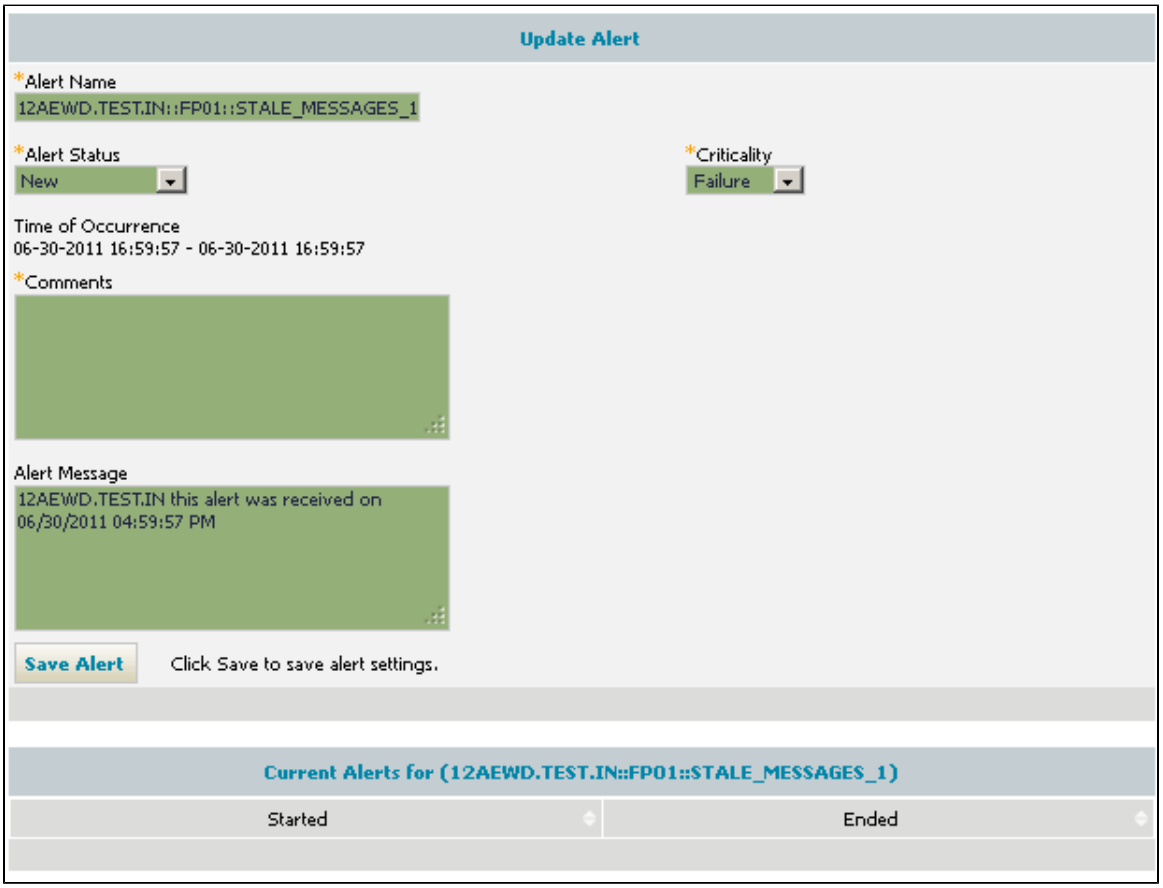


Press ***Search Alerts*** button in the bottom to view list of alerts in the ***Alert Search Results*** page.

2.3.1.3 Editing Alerts

Alerts can be edited by changing the status of the alert as well as putting in comments regarding the incident.

Press ***Edit*** button to go to ***Update Alert*** page:

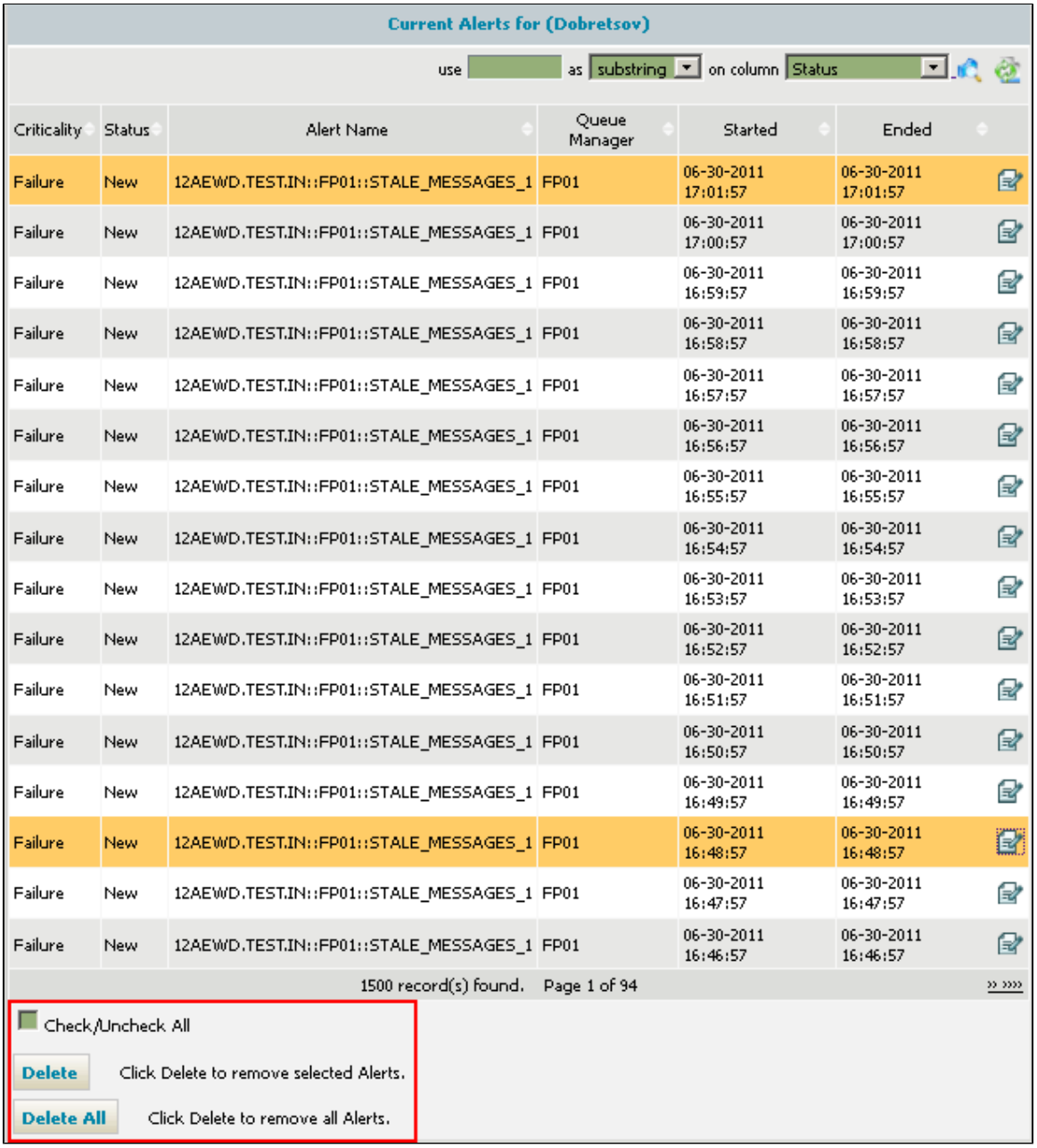


Here you can change ***Alert Name, Alert Status, Criticality, Comments*** and ***Alert Message***. Press ***Save Alert*** button to update new alert settings.

On the ***Current Alerts for*** page you can also see all the occurrences of this particular alert before it had been reported in the console.

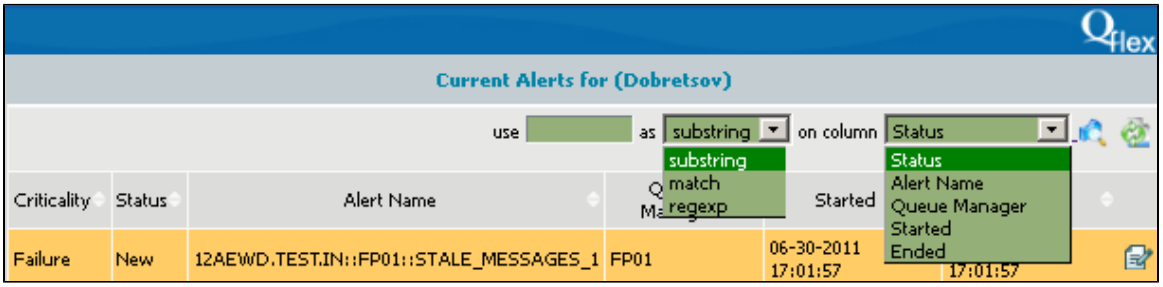
2.3.1.4 Deleting Alerts

Select an alert or use ***Check/Uncheck All*** checkbox to select all alerts and press ***Delete*** button to remove selected Alerts or press ***Delete All*** button to remove all of them:



2.3.1.5 Using sorting filter

You can use sorting filter on top of the list if you need to find a specific type of alert:



Press ***Search*** button to initiate search process or ***Refresh*** button to reload the data.

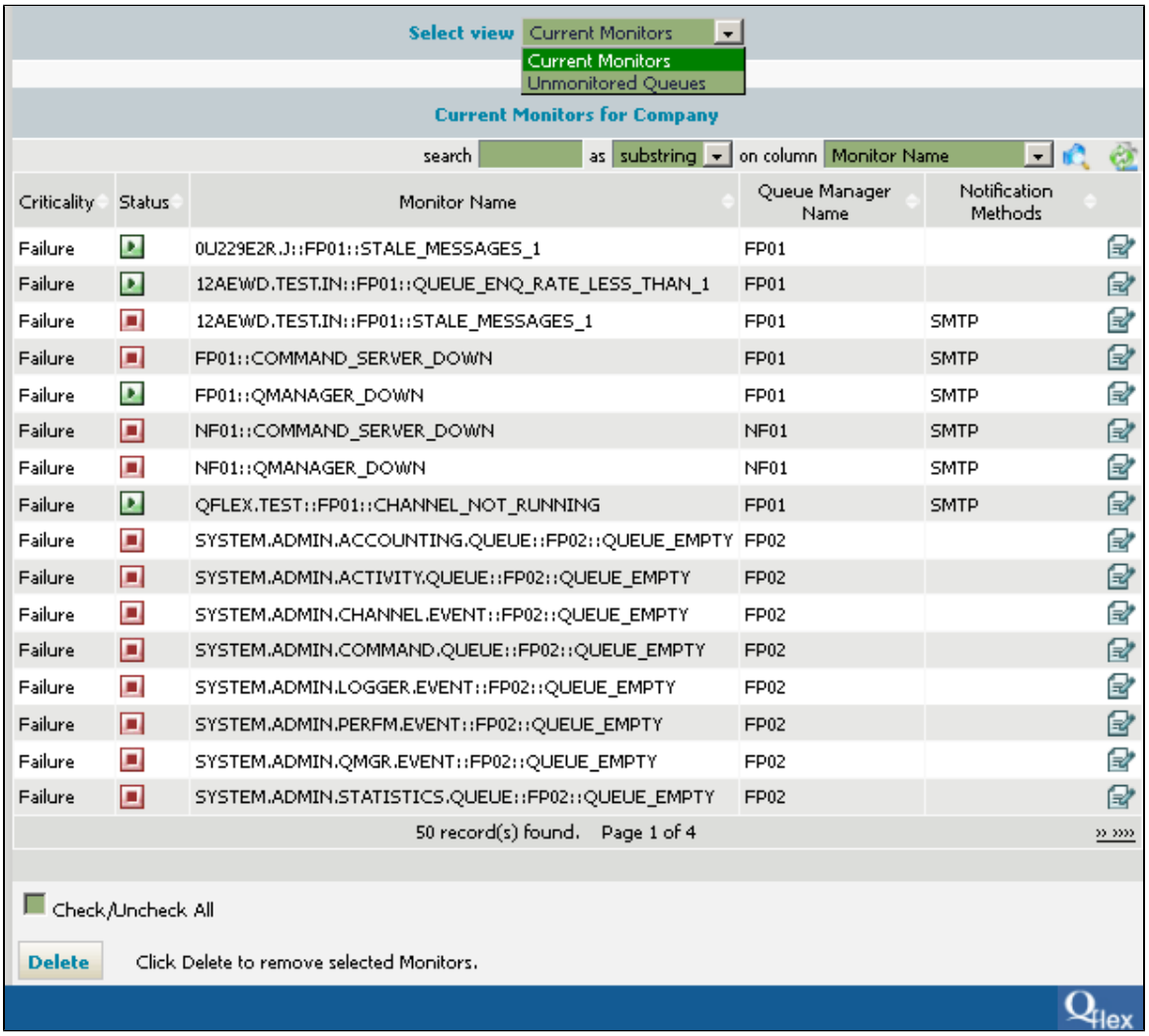
2.3.2 Monitors

Monitors are different from monitoring templates because they are bound to specic WebSphere MQ and WebSphere Message Broker objects. Monitors are also bound to specic triggering conditions values or parameters. Changing the monitor properties does not affect the template and vice versa. All properties inherited from the template can be over written.

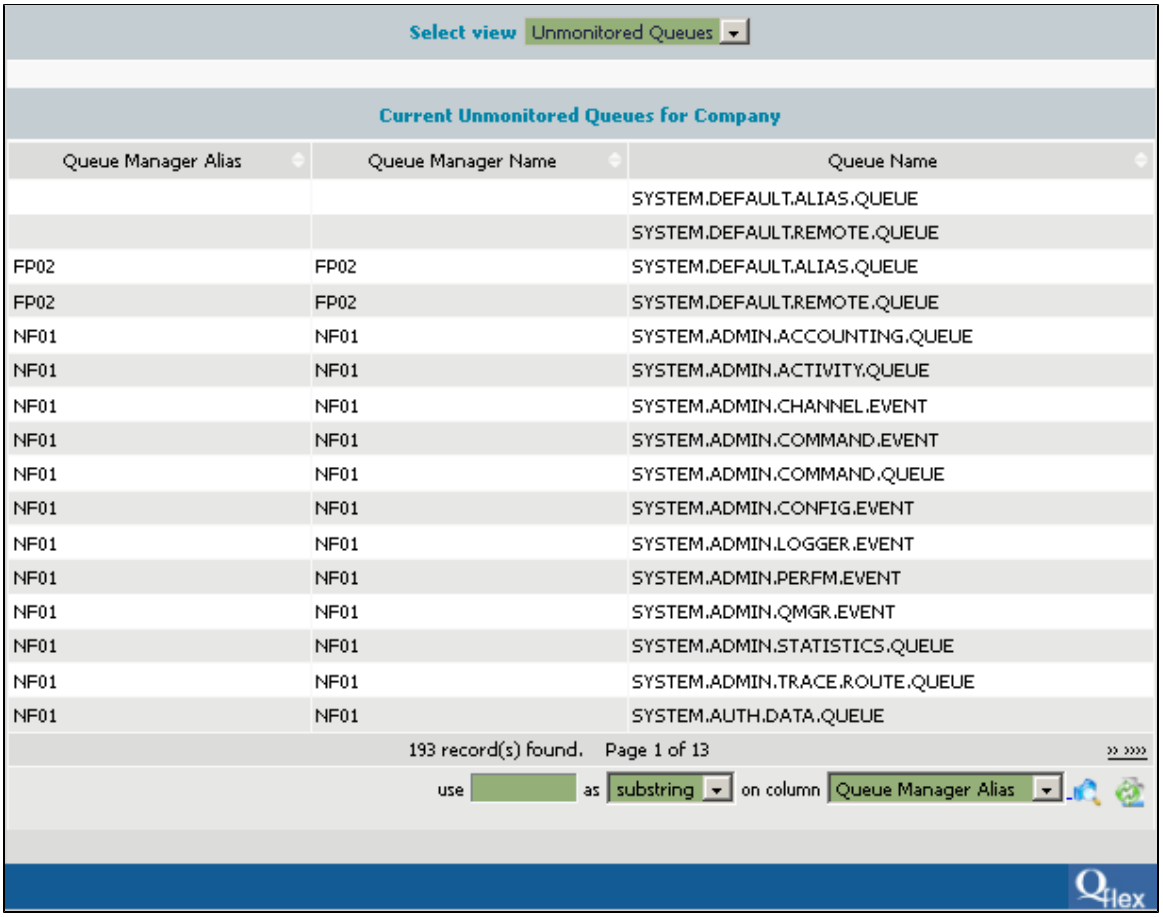
Any changes to the monitor are picked up automatically during next polling interval. This section describes how to view existing monitors, add and delete them.

2.3.2.1 Viewing existing monitors

To view current monitors go to ***Problem Management*** and click on ***Monitors***. In the opened page scroll down to ***Select view*** section and choose ***Current Monitors*** to see existing monitors:

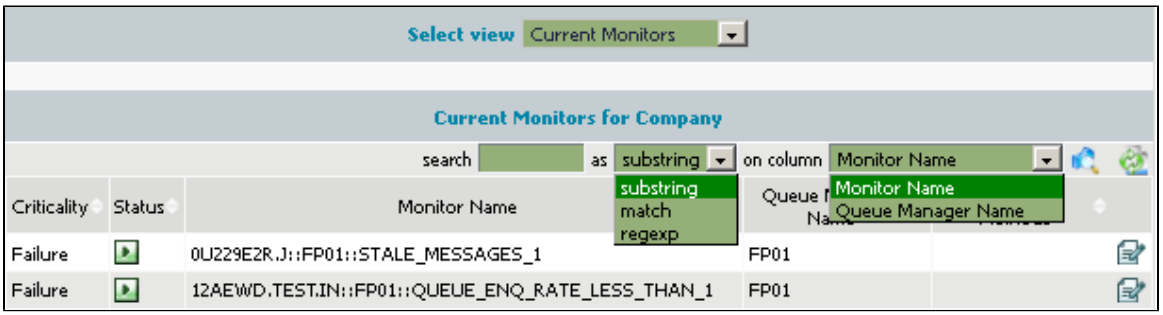


or ***Unmonitored Queues*** to see list of queues that are not monitored:

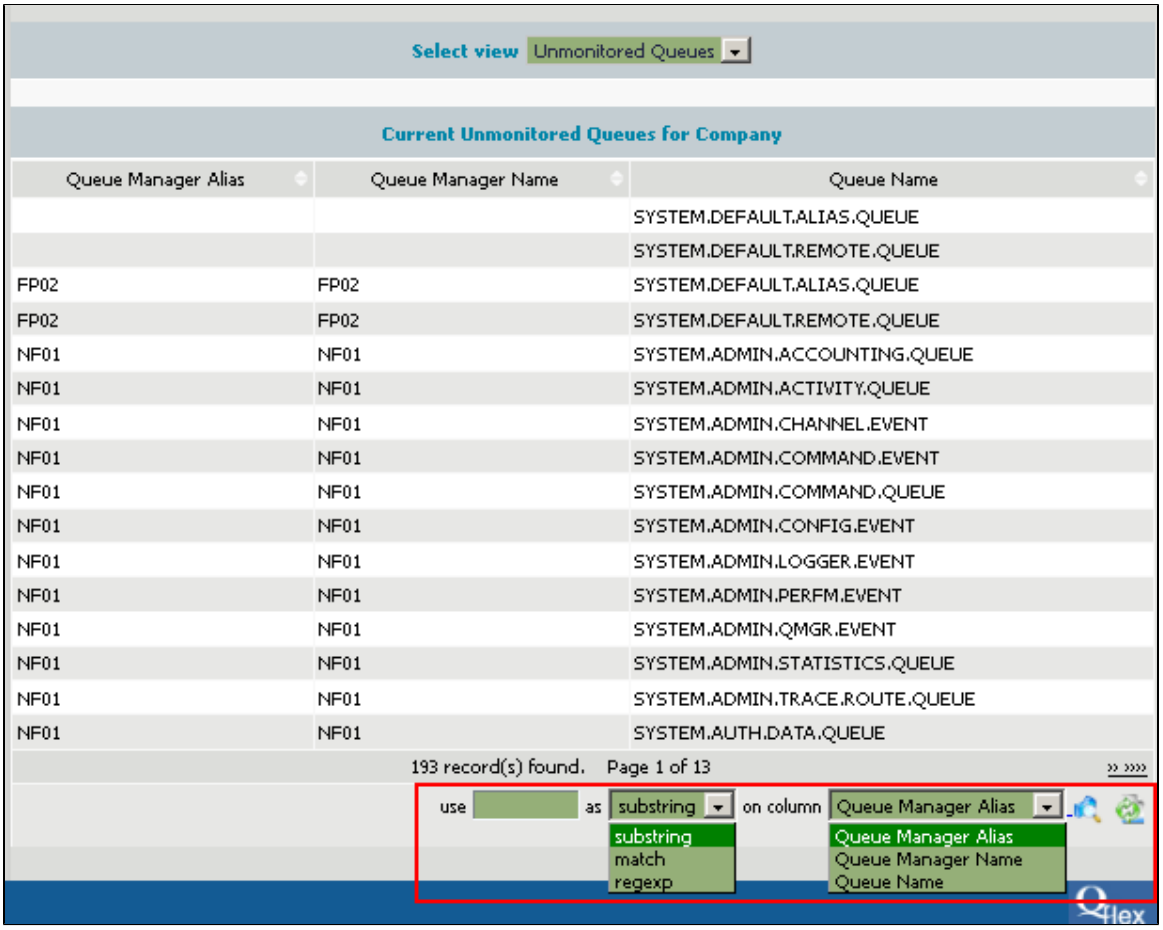


2.3.2.2 Using sorting filter

You can use sorting filter on top of the list if you need to find a specific type of monitor:



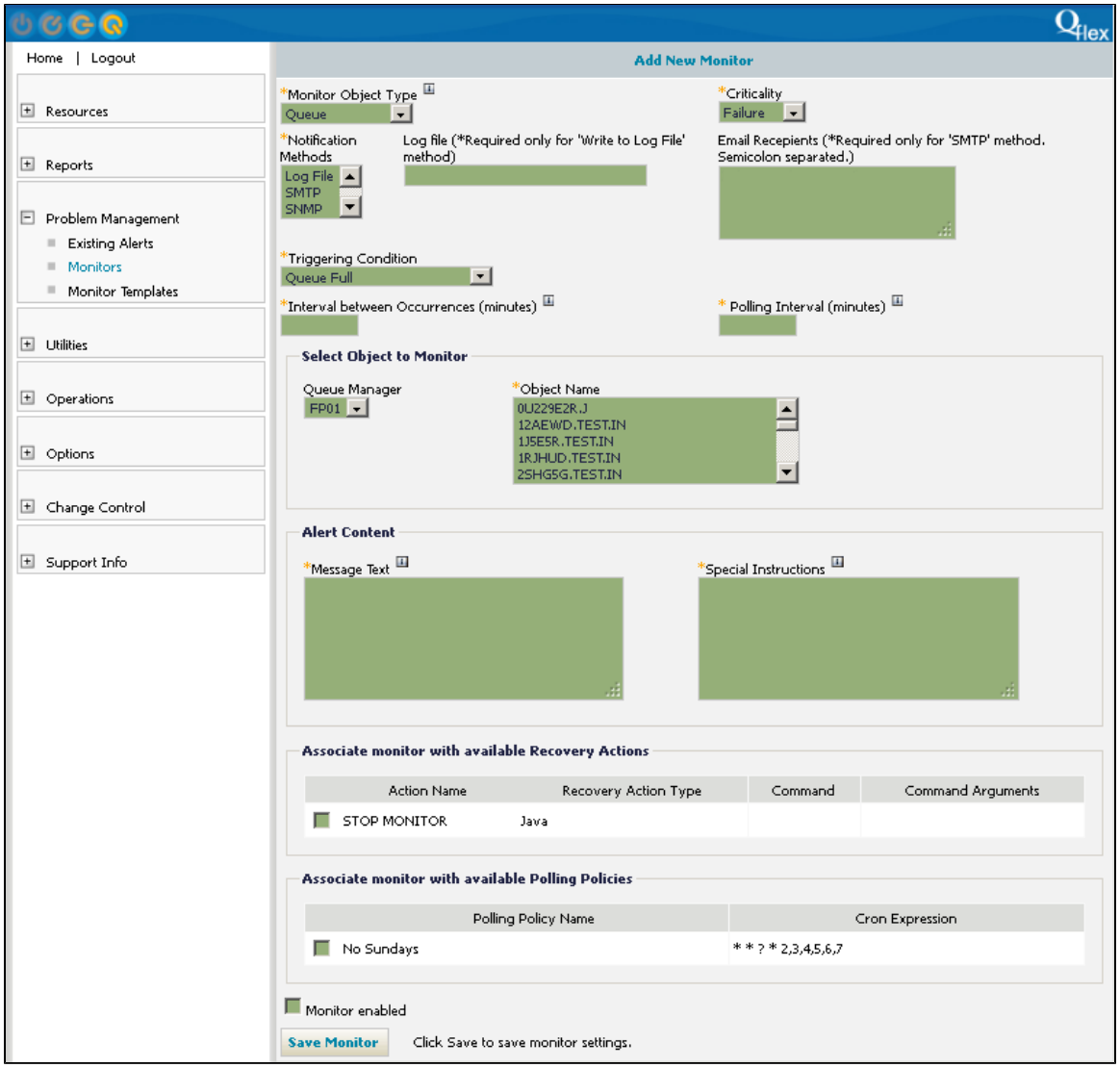
to sort unmonitored queues use filter in the bottom:



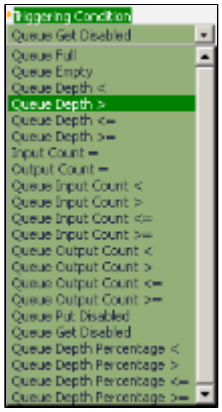
Press ***Search*** button to initiate search process or ***Refresh*** button to reload the data.

2.3.2.3 Adding new monitor

To create a monitor navigate to ***Problem Management*** and click on ***Monitors***. On the ***Add New Monitor*** page you can set the following data:



Parameter Name	Purpose
Monitor Object Type	Queue, Queue Manager, Channel, QoS, Broker or Flow.
Criticality	Failure, Warning, Problem or Info.
Notification Methods	Log file, SMTP, SNMP or RSS.
Log file	If Write to Log File is the notication method for the monitor, select le location where log les should be written. Any valid le path for the operating system hosting Qex is allowed.
Email *Recepients**	Required only for 'SMTP' method. Semicolon separated.

Triggering Condition	 Provide a value for this eld if Queue is the monitor object type. For example, to set up monitor that checks if the depth is over 10, triggering condition parameter should be Depth > and triggering condition parameter 10. For monitors with monitor object type Queue Manager or Channel this eld is irrelevant.
Interval between Occurrences (minutes)	allows to ignore subsequent occurrences of the alarm for a specified period of time, after monitoring condition occurred for the rst time. For example, Monitor Template A has Polling Interval set to 1 minute and Interval Between Occurrences is set to 3 minutes. After Qex notices that the condition has occurred for the rst time, it will send an alarm however it will not send another alarm until three minutes have elapsed provided during that time condition remained true. Once the alert is sent, message in the web console will also show all times and number of occurrences that monitoring condition was true but no alert was sent out. If condition had no longer been met during the interval between occurrence the counter is reset.
Polling Interval (minutes)	controls frequency with which monitored condition is checked. Minimal value is 1 minute.
*Special Instructions	provides a way to customize messages for each monitor. You are encouraged to use this eld to instruct your operations and data center staff about handling of this alarm. You can use all the custom tags that are used in Alert Text.
*Recovery Text	provides a way to customize messages for each monitor. You are encouraged to use this eld to instruct your operations and data center staff about handling of this alarm. You can use all the custom tags that are used in Alert Text.

In the ***Select Object to Monitor*** you can choose available ***Queue Manager*** from dropdown menu and ***Object Name***. Select the queue manager where the monitored object resides. If and only if monitoring object type is Queue Manager multiple queue managers can be selected by holding Ctrl-Key while clicking on the names of queue managers. Template can then be applied to multiple queue managers. Select the object name that is to be monitored. Object names should be either a channel name or queue name depending on the monitor object type selected. Hold Ctrl-Key and click on object names to select multiple objects. The template will then be applied to all objects selected.

In the ***Alert Content*** section you can type notification in the ***Message Text*** box and in ***Special Instructions*** text with advice or command for user. Alert Text provides a way to customize messages for each monitor. Following custom tags can be used in the message body. These tags will be replaced with the actual values at runtime:

```
* $date \-Date
* $qm_nm \-Queue Manager Name
* $qm_alias \-Qex Queue Manager Alias
* $q_nm \-Queue Name
* $q_depth \-Current Queue Depth
* $q_in_count and $q out out \-Queue Input and Output Count
* $channel_nm \-Channel Name
* $channel_sts \-Channel Status
* $channel_start \-Channel Start Time
* $channel_tp \-Channel Type
* $connection_count \-Number of Current Channel Connections
* $monitor_nm \-Monitor Name
* $severity \-Alert Severity
* $trig_condition_param \-Triggering Condition Parameter
* $monitor_nm \-Monitor Name
* $recovery_text \-Special Instructions Text
* $msg_id \-Message ID of a Stale Message
* $msg_body \-Message Body of a Stale Message
* $msg_put_time \-Message Put Time of a Stale Message
* $brk_nm \-Broker Name
* $ow_nm \-Flow Name
* $eg_nm \-Execution Group Name
```

Advanced Stale Message Alert Text

QoS Stale Message monitor allows Qex end user not only list the basic details of a stale message at the top of the queue, but also display any message header variable and loop through a number of stale messages on the queue.

Qex 2.0 introduced new variable called $stale_message. Using this variable one can access the following elds to provide more details in the alert content:

```
$stale_message.id \-Same as $msg_id
$stale_message.data \-Same as $msg_body
$stale_message.messageHeader \-Object that provides access to MQMD
$stale_message.messageHeader.accountingToken
$stale_message.messageHeader.applicationId
$stale_message.messageHeader.applicationOrigin
$stale_message.messageHeader.backoutCount
$stale_message.messageHeader.Coa
$stale_message.messageHeader.Cod
$stale_message.messageHeader.CodePage
$stale_message.messageHeader.CorreclationId
$stale_message.messageHeader.expiration
$stale_message.messageHeader.expiry
$stale_message.messageHeader.groupId
$stale_message.messageHeader.messageFormat
$stale_message.messageHeader.messageType
$stale_message.messageHeader.persistence
$stale_message.messageHeader.priority
$stale_message.messageHeader.putApplicationName
$stale_message.messageHeader.putTime
$stale_message.messageHeader.replyToQueueName
$stale_message.messageHeader.replyToQmanagerName
$stale_message.messageHeader.messageSequenceNumber
$stale_message.messageHeader.userId
$stale_message.messageHeader.messageFlags
$stale_message.messageHeader.originalLength
$stale_message.messageHeader.characterSet
$stale_message.messageHeader.encoding
$stale_message.messageHeader.feedback
```

In the ***Associate monitor with available Recovery Actions*** section check the box next to an Action you want the monitor to be associated with.

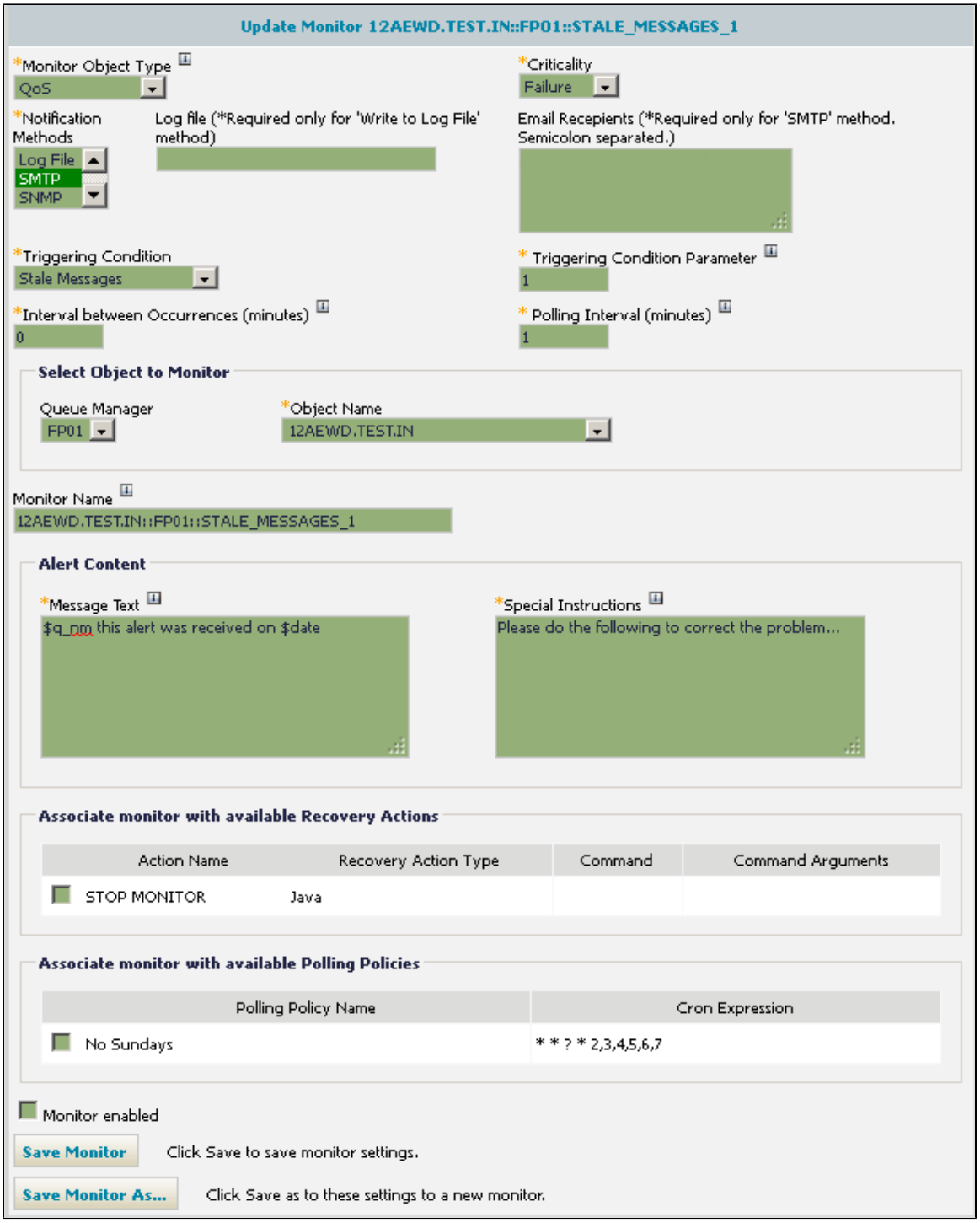
Associate monitor with available Polling Policies section offers possibility to associate a monitor with existing polling policy by checking it.

By checking ***Monitor enabled*** checkbox you allow activating the monitor upon creation.

By pressing ***Save Monitor*** button you will save the new settings.

2.3.2.4 Editing a monitor

To edit a monitor press ***Edit*** button at the end of the line:



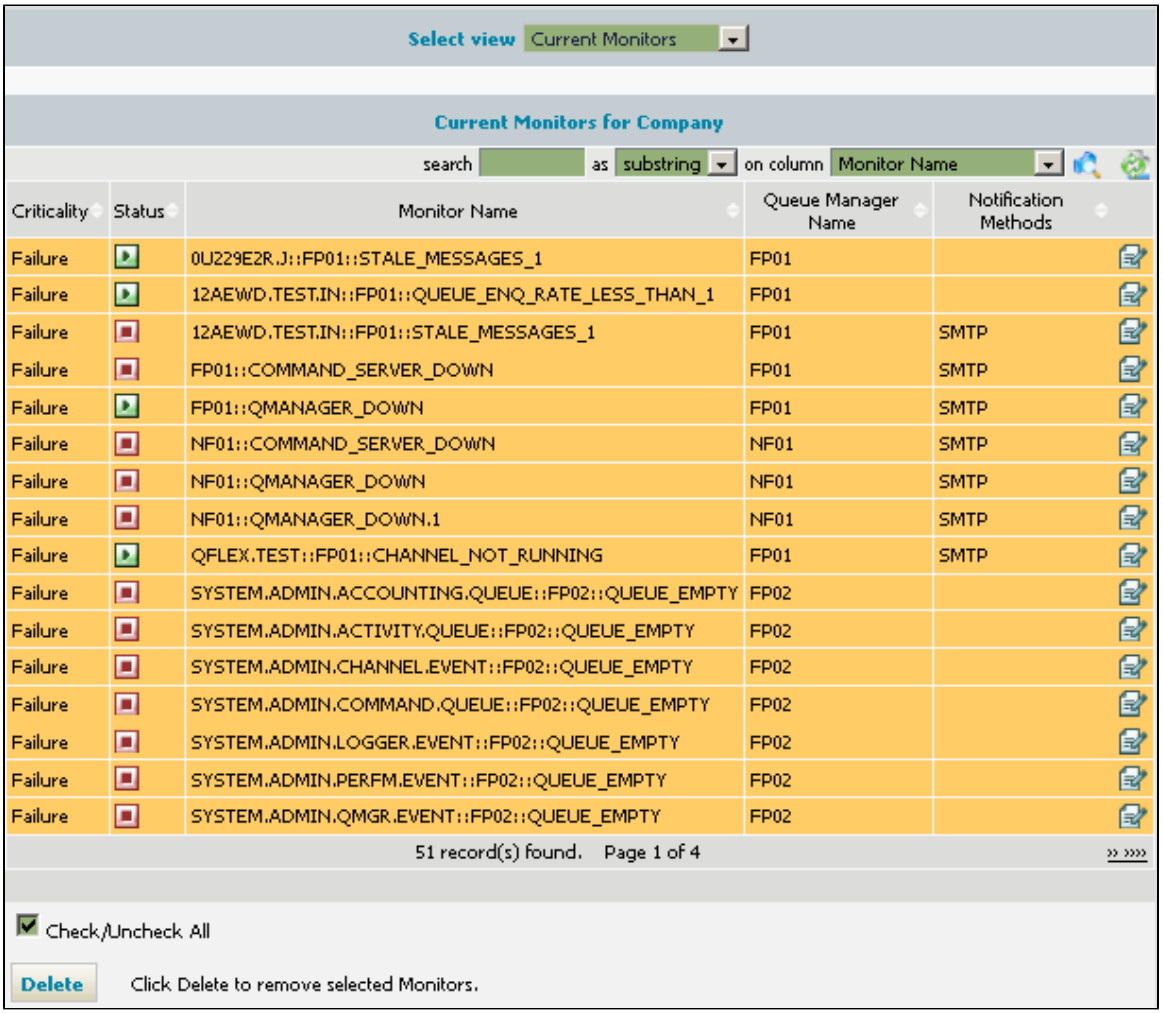
Check/uncheck ***Monitor enabled*** checkbox to start/stop monitoring.

By pressing ***Save Monitor*** button you will save the new settings.

Save Monitor As is used to copy existing monitor with it settings to new monitor. New monitor receives a name in form <SOURCE_MONITOR_NAME>.N, where N - auto incremented numeric index.

2.3.2.5 Deleting monitors

To remove one monitor click on it or check ***Check/Uncheck All*** checkbox to select all monitors, then press ***Delete*** button:



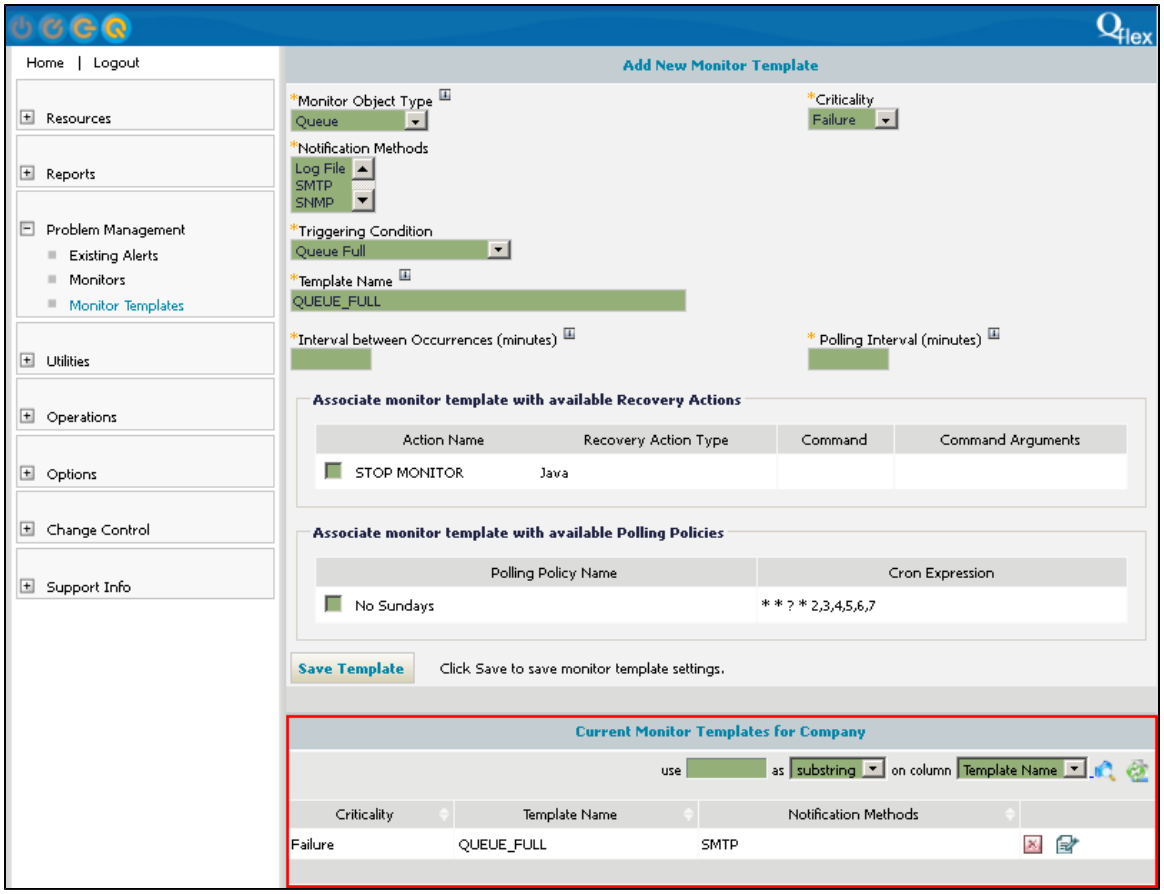
2.3.3 Monitor Templates

Monitor Templates is an easy way create many monitors and apply them to n number of objects. Once the monitor had been created using a template there is no relationship between the monitor and the monitoring template. For example, if the property of the template which was used to create a monitor is modied the change will not affect the monitor. Templates are simply cookie cutters for creating monitors. Templates dene all attributes of a monitors except triggering condition and the object name. Any other attribute of a monitor can be customized after it had been created with the template.

This section shows how to view, add, edit and delete monitor templates.

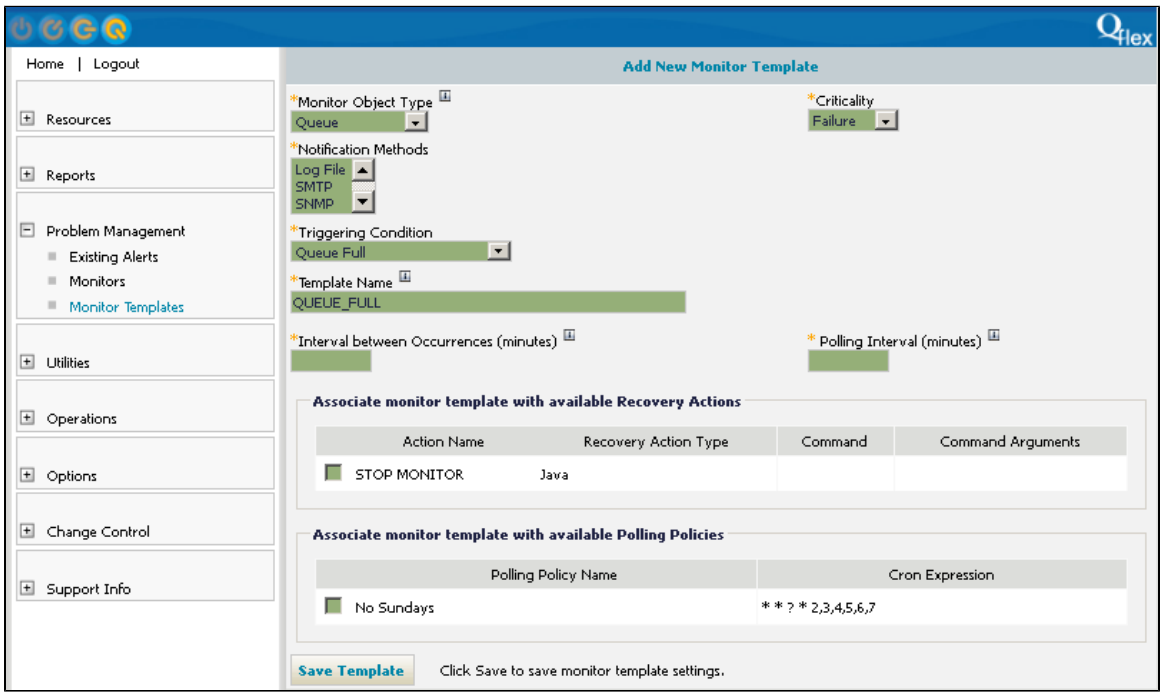
2.3.3.1 Viewing current monitor templates

To view current monitors go to ***Problem Management*** and click on ***Monitor Templates***. In the opened page scroll down to ***Current Monitor Templates for Company*** to see existing monitor templates:

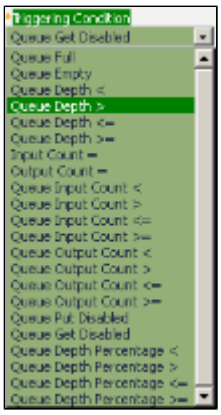


2.3.3.2 Adding new monitor template

To create a monitor navigate to ***Problem Management*** and click on ***Monitor Templates*.** On the ***Add New Monitor Template*** page you can set the following data:



Parameter Name	Purpose

Monitor Object Type	In order to monitor status of the queue manager, choose Queue Manager as monitor object type. For channel events such as channel stopping, channel binding, etc., choose Channel. For queue related attributes such as depth or number input processes, choose Queue. Monitor object can also be Broker and Flow for broker related conditions as well as QoS for advanced monitoring.
Criticality	Choose appropriate criticality level as you see t - *Failure, Warning, Problem* or *Info*. As of release 1.0.x, Qex will not perform any special behavior for different criticality levels. In the future, however there will be functionalities that will rely on criticality for various types of handling of alert messages. Criticality is passed along with the alert via all notication methods. You may choose to instruct your staff to act different upon receiving alerts with various criticality levels.
Notification Methods	Regardless of what notication method is chosen, all alerts with status New will be displayed in the Qex Web Console. The following notication methods are currently supported: Log le, SMTP, SNMP and RSS.
Triggering Condition	 are displayed based on the monitoring object type selected to narrow down the specic type of event. Triggering condition parameters or values can be selected during creation of the actual monitors.
Template Name	is assigned automatically. It is recommend that you accept auto generated name however you are free to use your own template names.
Interval between occurrences (minutes)	allows to ignore subsequent occurrences of the alarm for a specied period of time, after monitoring condition occurred for the rst time. For example, Monitor Template A has Polling Interval set to 1 minute and Interval Between Occurrences is set to 3 minutes. After Qex notices that the condition has occurred for the rst time, it will send an alarm however it will not send another alarm until three minutes have elapsed provided during that time condition remained true. Once the alert is sent, message in the web console will also show all times and number of occurrences that monitoring condition was true but no alert was sent out. If condition had no longer been met during the interval between occurrence the counter is reset.
Polling Interval(minutes)	allows to control frequency with which monitored condition is checked. Minimal value is 1 minute.

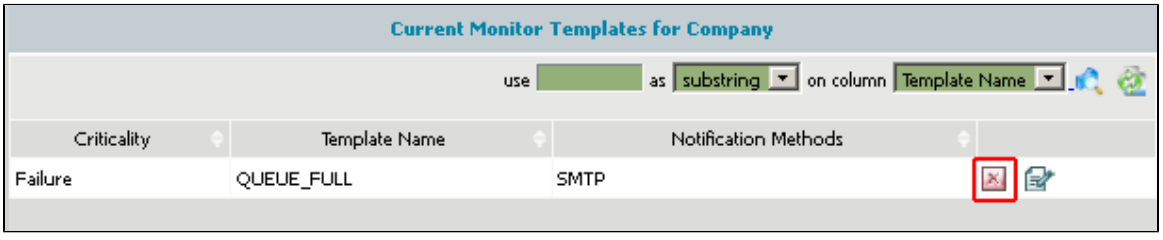
In the ***Associate monitor template with available Recovery Actions*** section check the box next to an Action you want the monitor template to be associated with.

Associate monitor template with available Polling Policies section offers possibility to associate a monitor with existing polling policy by checking it.

By pressing ***Save Template*** button you will save monitor template settings.

2.3.3.3 Deleting monitor template

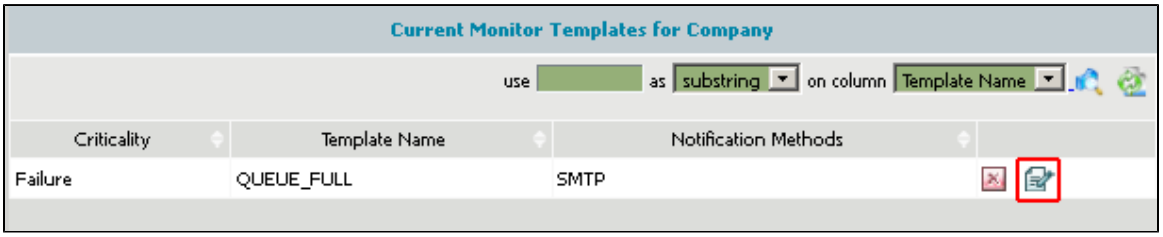
To delete monitor template press ***Delete*** button at the end of the row:



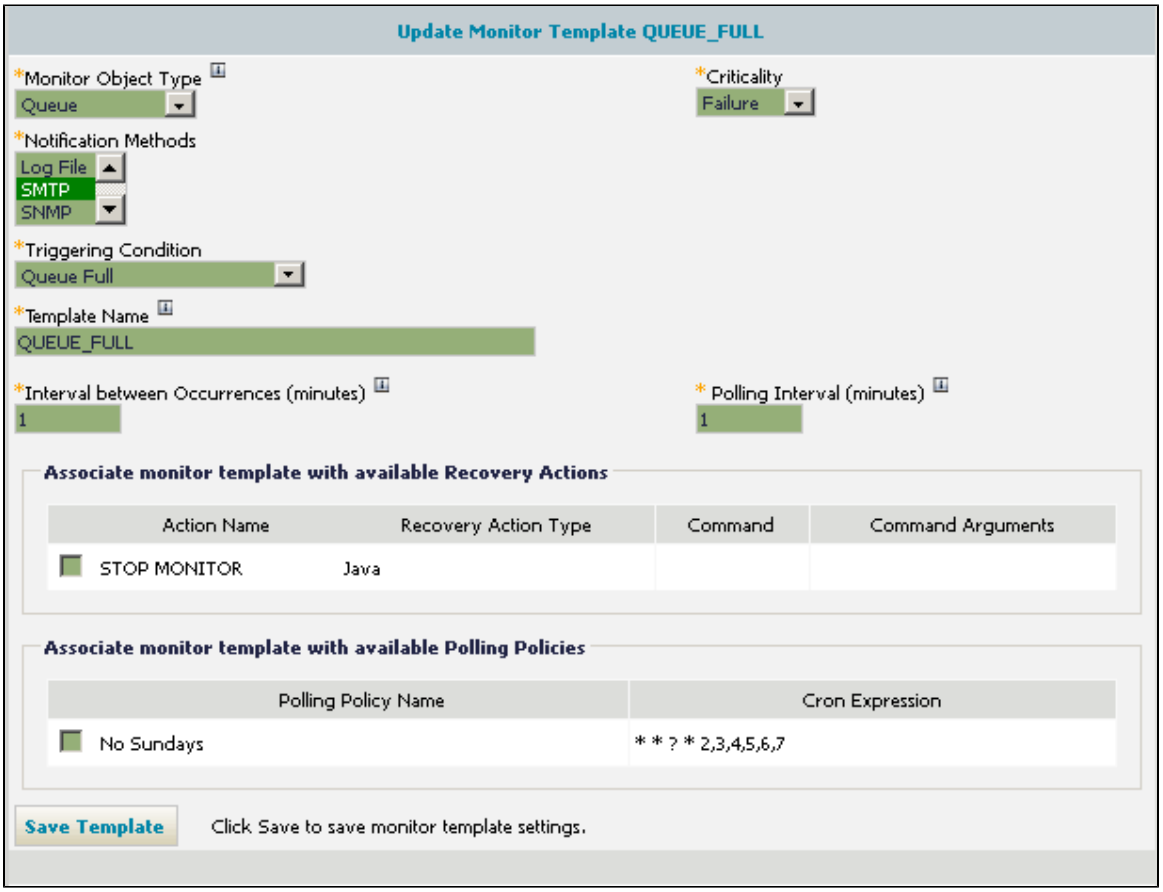
A window will pop up requesting confirmation of deleting action, press Ok to delete or Cancel to go back.

2.3.3.4 Editing monitor template

To modify existing monitor template press ***Edit*** button at the end of the row:



On the ***Update Monitor Template*** page you can modify data for selected monitor template:



Press ***Save Template*** button to store new settings.

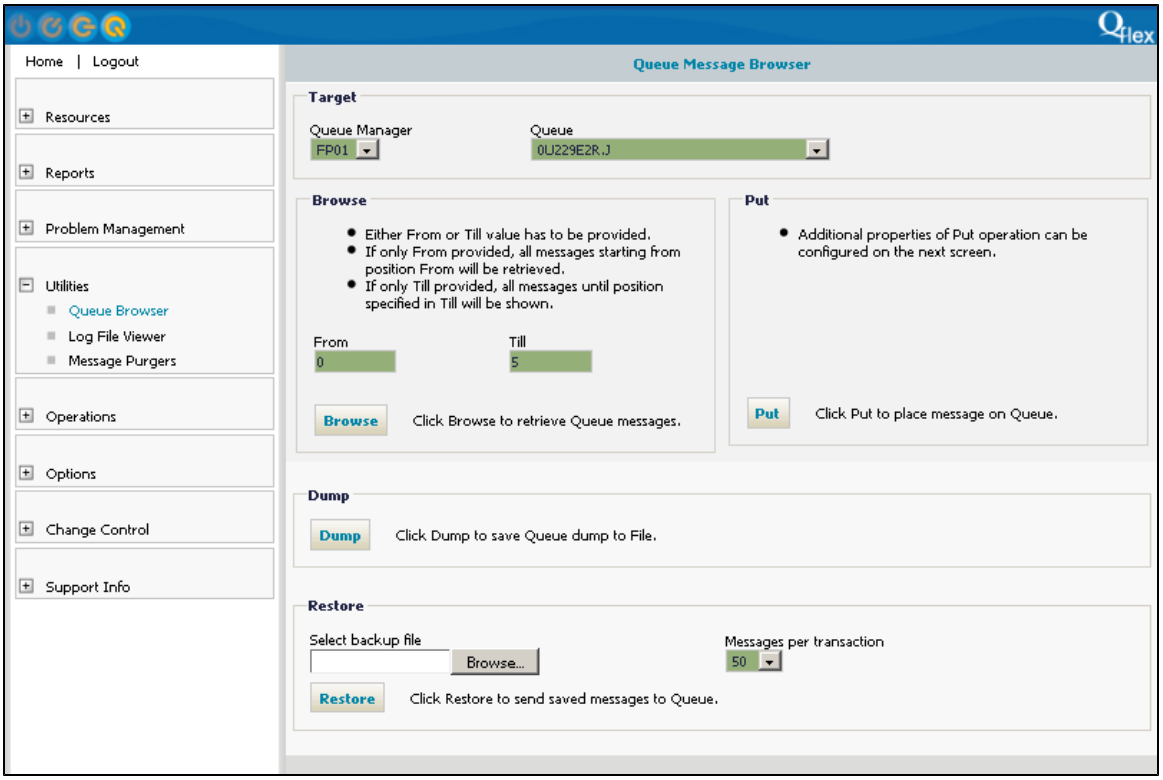
2.4 Managing Utilities

This chapter represents information on managing such utilities as Queue Browser, Log File Viewer and Message Purgers.

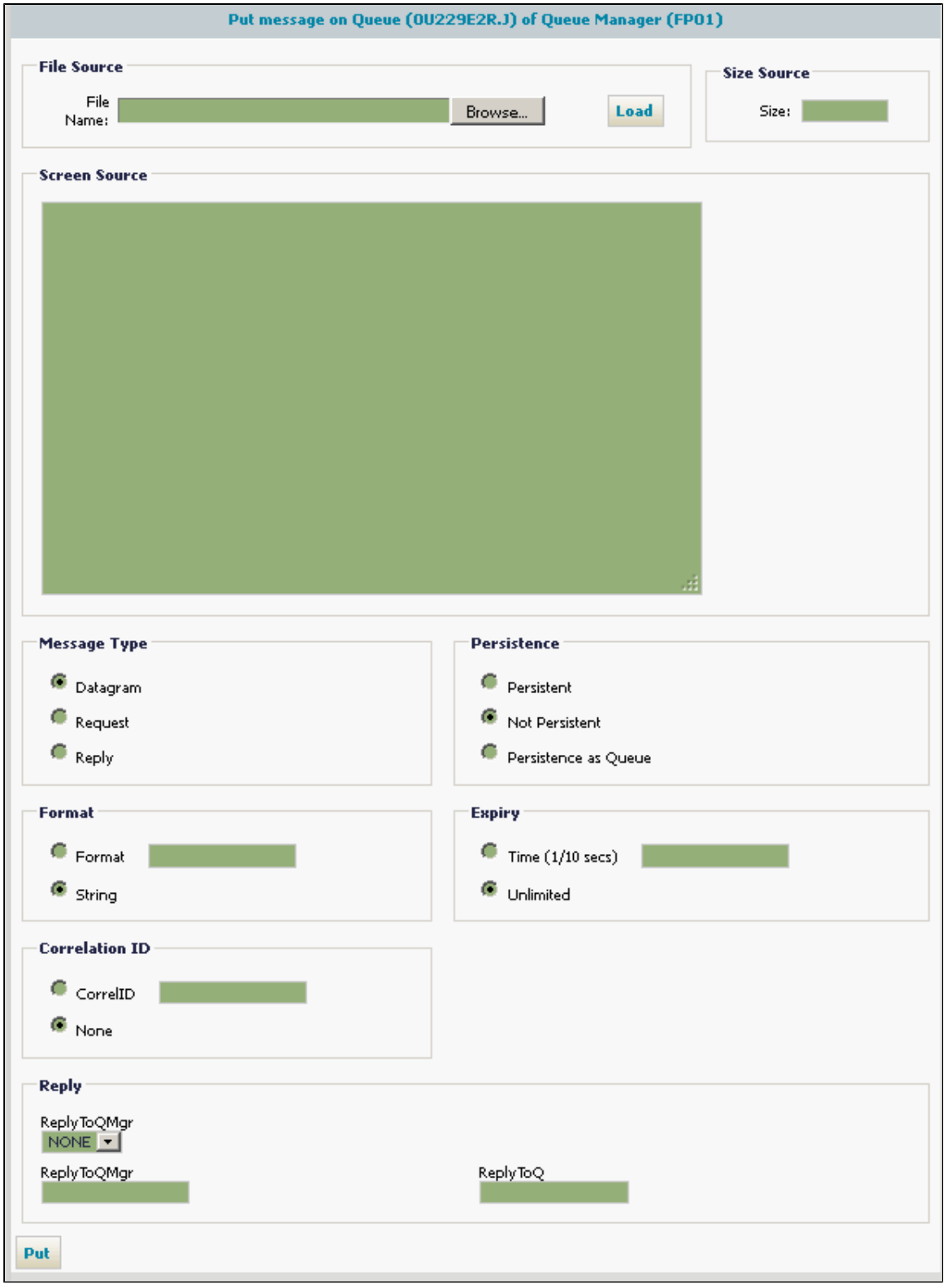
2.4.1 Queue Browser

Qex allows its users to browse the queues of any Queue Manager that had been added into the Qex.

To browse a queue message, navigate to ***Utilities*** -> ***Queue Browser*** and set the following data in ***Queue Message Browser*** section:



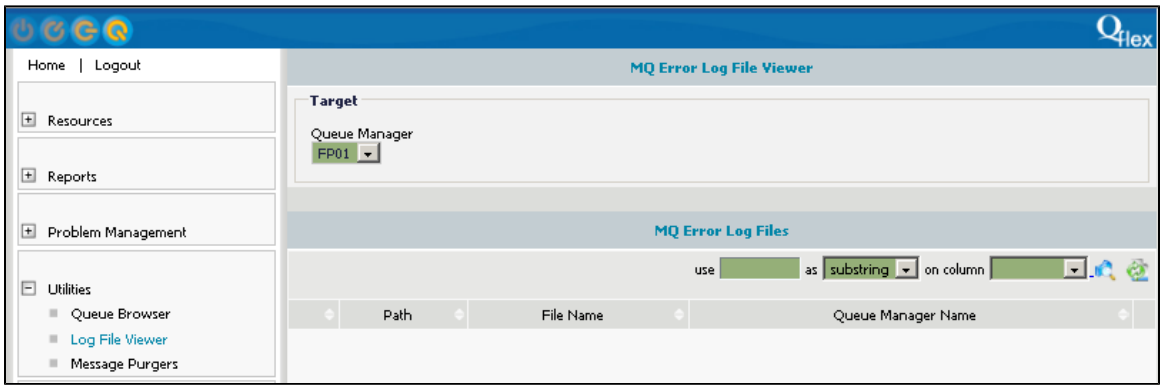
Parameter Name	Purpose
Queue Manager	choose from this dropdown menu a queue manager.
Queue	select from this dropdown menu a queue.
Browse section	explains how to use ***From*** and ***Till*** values. To retrieve messages of specic sequence put in values for the starting message sequence number and/or ending. You will be presented with the list of messages. Messages will be converted to the native CCSID of the J2EE Server where Qex resides. Queue browser can only display MQMD header. At this point Queue Browser will not display MQHFR2 headers or any other. Click on the i icon next to the message to view MQMD and message data.

Put section	Click ***Put*** button to place message on Queue. On the next page you can configure additional properties of Put operation: 
Dump	to save Queue dump to File press ***Dump*** button.
Restore	in this section you can browse for the backup file and select from dropdown menu number of messages per transaction. After you select backup file and set number of messages press ***Restore*** button.

2.4.2 Log File Viewer

If SSH parameters such as Data Root Directory, username and password have been supplied when the queue manager was added to Qflex, it is possible to use Qflex to browse any AMQERROR log files and FDC files in the Websphere MQ data root directory such as /var/mqm.

In the ***MQ Error Log File Viewer*** section choose in the ***Target*** section a queue manager from dropdown menu. You will see the result below in ***MQ Error Log Files*** section:



Use sorting filter on top of the list to change order of data representation.

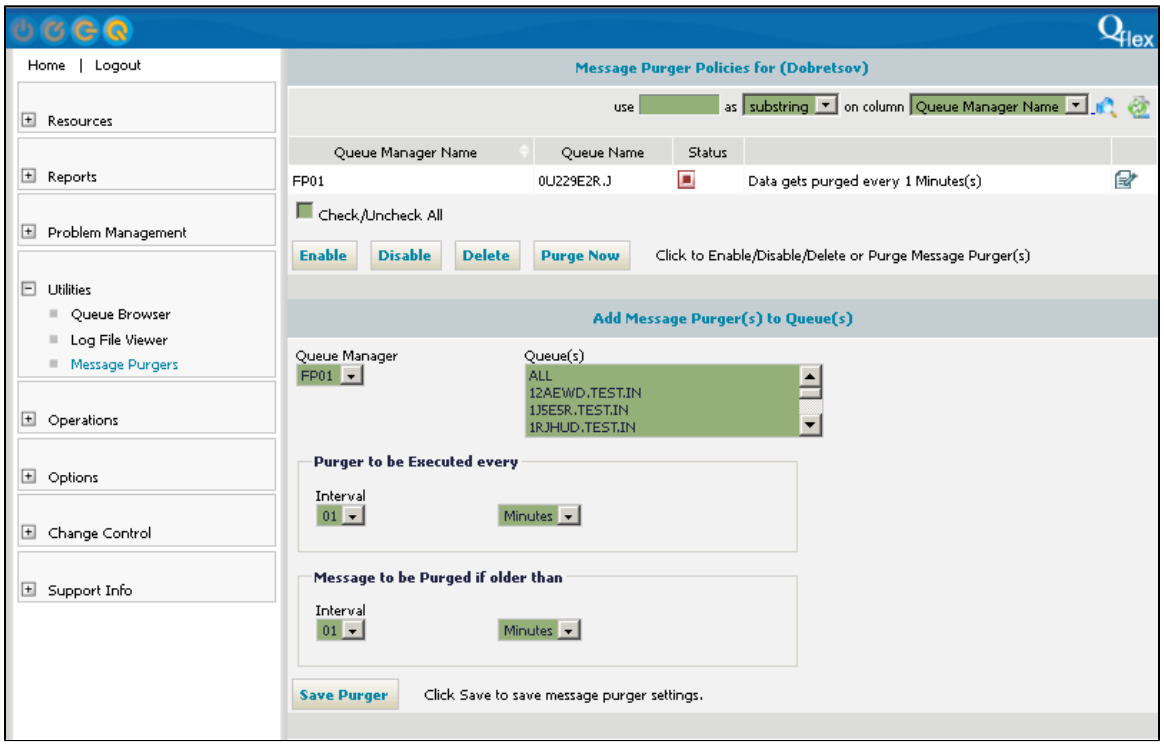
2.4.3 Message Purgers

Message purger can scan WebSphere MQ queues with certain frequency and purge messages over a certain age.

This section describes adding, updating, editing and deleting message purgers.

2.4.3.1 Adding new message purger

To create new message purger go to ***Utilities -> Message Purgers***. On the ***Add Message Purger(s) to Queue(s)*** you can set the following data:



Select ***Queue Manager*** and ***Queues*** where purger should search for old messages.

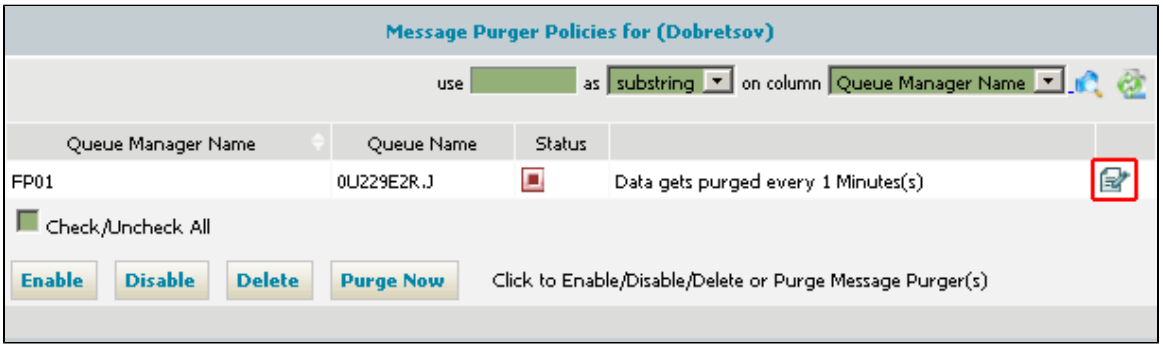
In the ***Purger to be Executed every*** section select frequency with which purger should run by choosing ***Interval*** (01-99) and unit of measure (***minutes, hours, day, weeks, months*** or ***years***).

You can also set time interval of message life in the ***Message to be Purged if older than*** section.

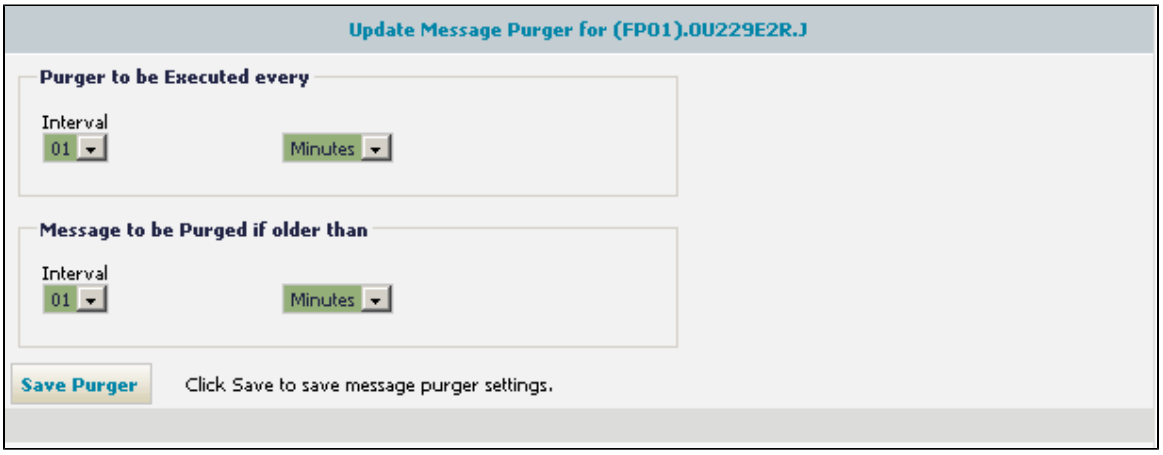
Press ***Save Purger*** button to save new message purger.

2.4.3.2 Updating message purger

To edit a message purger select it or check ***Check/Uncheck All*** checkbox to select all existing items and press ***Edit*** button :



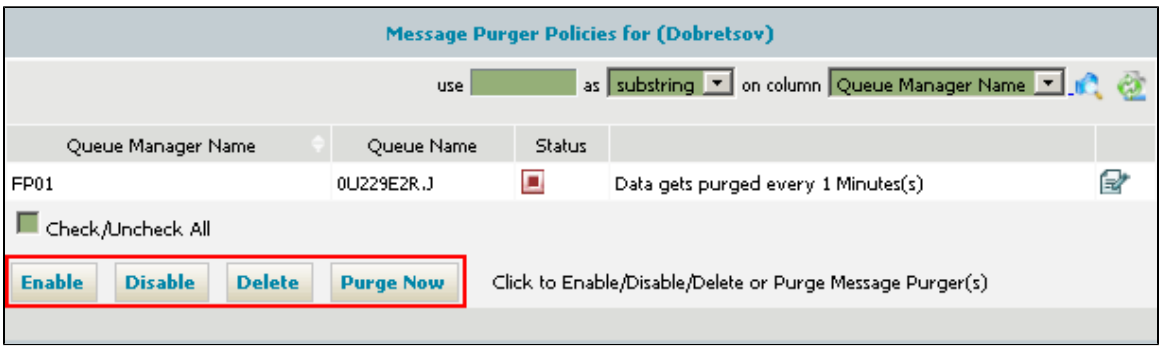
Update Message Purger page will appear where you can modify the following data:



Press ***Save Purger*** button to save new settings.

2.4.3.3 Editing and deleting message purger

In the ***Message Purger Policies*** section you can edit and delete one or all message purgers:



Enable/Disable buttons allow to switch on or off a message purger.

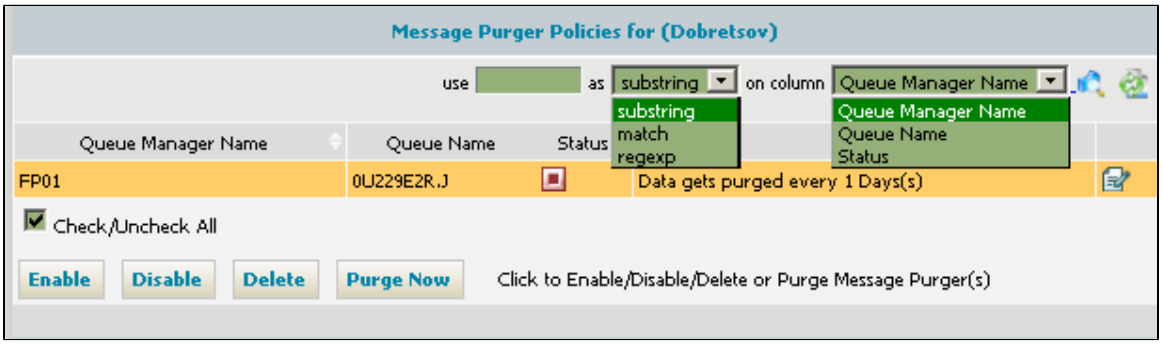
By pressing ***Delete*** button you can remove all or specific message purgers.

If you press ***Purge Now*** the message will be purged immediately regardless of the set purge time.

After you press one of the above buttons a window will popup requesting confirmation of your action - press ***Ok*** to continue or ***Cancel*** to go back.

2.4.3.4 Using sorting filter

You can use sorting filter on top of the list if you need to find a specific type of message purger:



Press ***Search*** button to initiate search process or ***Refresh*** button to reload the data.

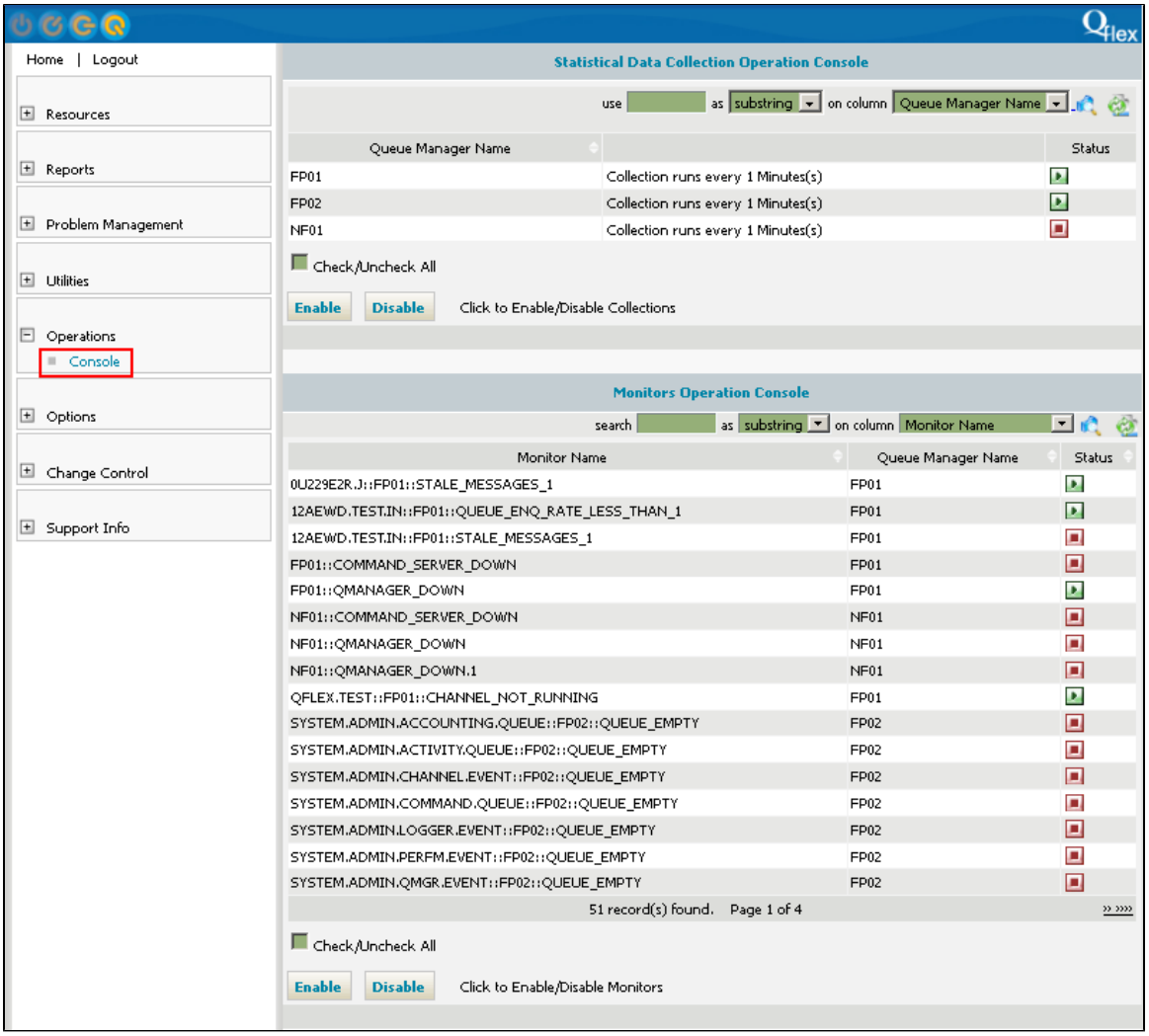
2.5 Managing Operations Console

Operations console is useful when your queue manager is undergoing a migration and you would like to prevent all clients from connecting to the queue manager. Simply suspend those activities and Qex will not be connecting to the queue manager.

In this section of QFLEX you can view operations console, manage statistical data collection operation console and manage monitors operation console.

2.5.1 Viewing Operations Console

To view operations console go to ***Operations -> Console***. You will see two sections - Statistical Data Collection Operation Console and Monitors Operation Console:

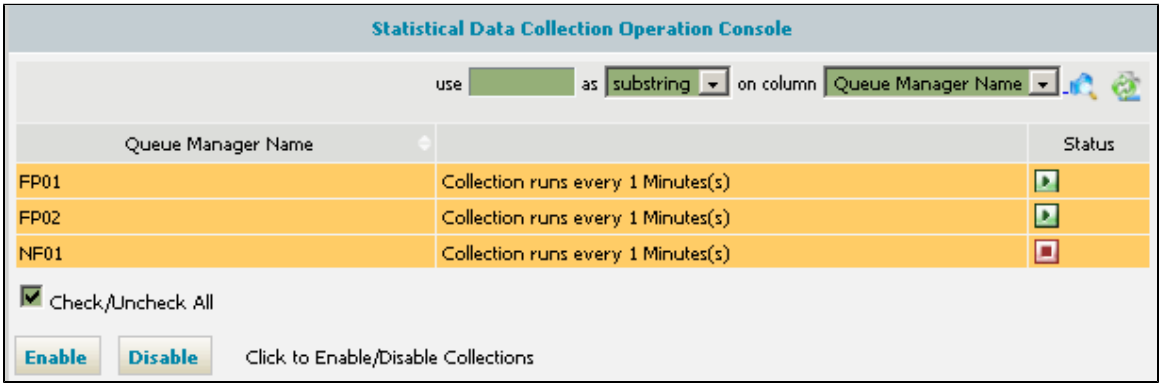


Statistical Data Collection Operation Console shows a list of data with queue manager name, frequency of collection and status: running or stopped .

Monitors Operation Console shows a list of data with monitor name, queue manager name and running or stopped status.

2.5.2 Managing Statistical Data Collection Operations Console

To start/stop collections for specific or all queue managers select them by clicking or checking ***Check/Uncheck All*** checkbox and press ***Enable/Disable*** button:

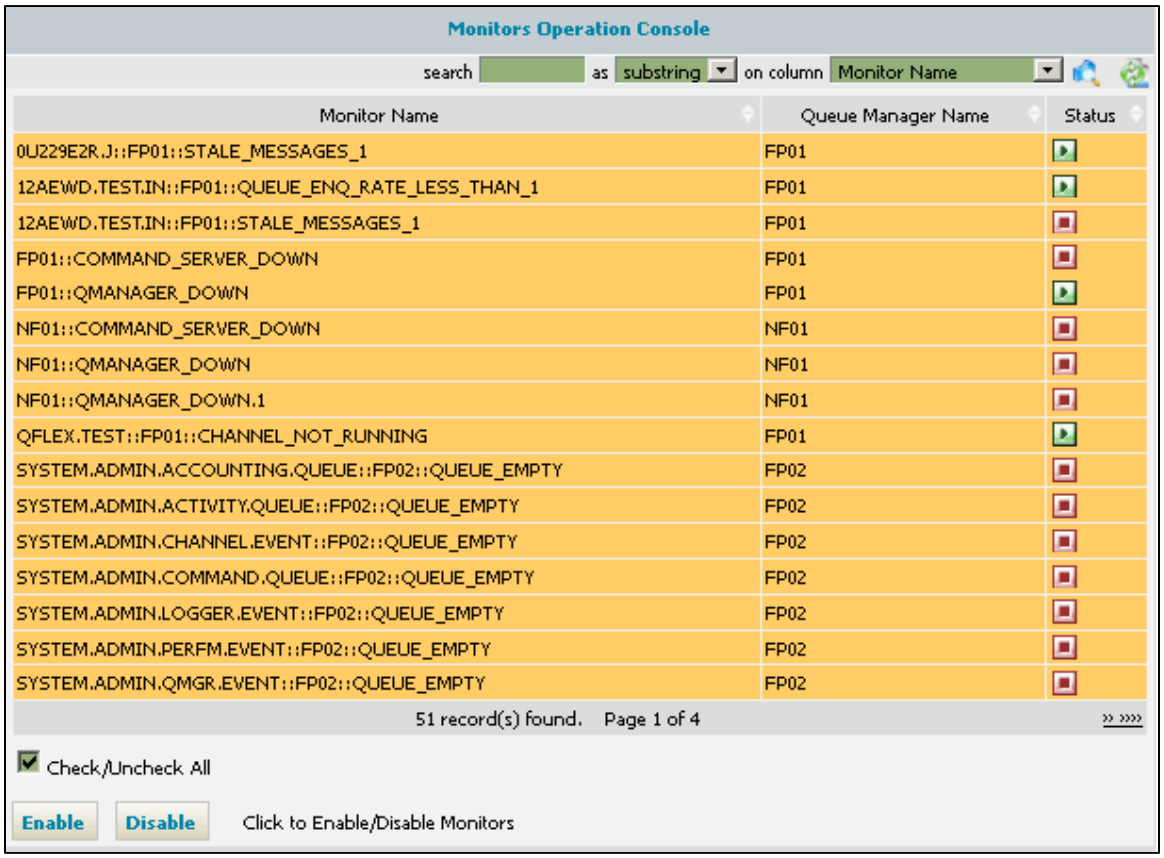


A window will pop up requesting confirmation of enabling or disabling action, press Ok to continue or Cancel to go back.

Changing of the collection policy automatically shuts down the process of collection. After a collection policy had been modied, it will need to be restarted manually.

2.5.3 Managing Monitors Operations Console

To start/stop monitoring for specific or all monitors select them by clicking or checking ***Check/Uncheck All*** checkbox and press ***Enable/Disable*** button:

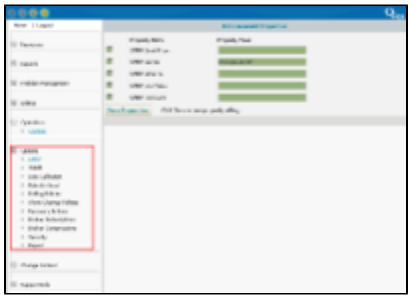


A window will pop up requesting confirmation of enabling or disabling action, press Ok to continue or Cancel to go back.

If all monitors for specic queue managers are deleted, the monitoring will automatically turn o. Monitoring will need to be manually turned back on when new monitors are created.

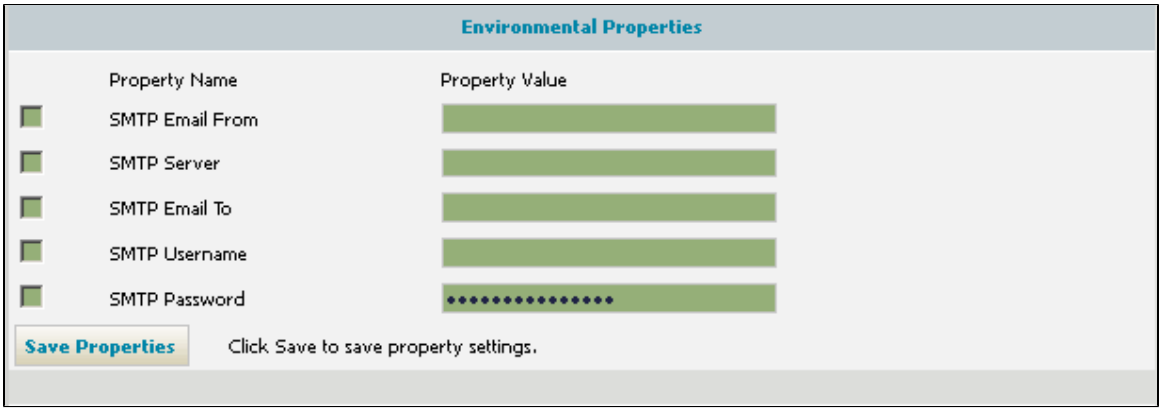
2.6 Managing Options

This chapter explains how to congure various options in Qex.



2.6.1 SMTP settings

SMTP needs to be congured if you are planning to use Email for alert notication and to send bug reports to Netexity. Navigate to ***Options*** -> ***SMTP***. In the **Environmental Properties** section check boxes next to the elds that you will be changing:



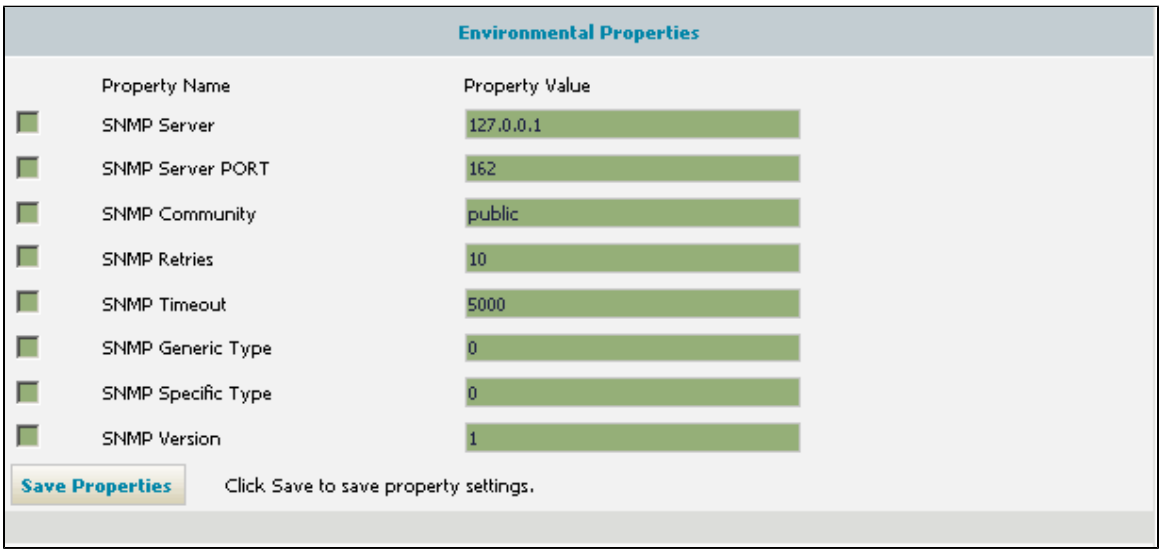
Parameter Name	Purpose
SMTP EMAIL FROM	is the email address that will be used as from address when sending alerts and bug reports. This must be a valid email address in your domain.
SMTP SERVER	is the host name of the server hosting SMTP server.
SMTP EMAIL TO	is a eld where one or more email addresses can be specied. These addresses will receive alerts when monitoring conditions occur. To specify multiple addresses, separate them with semicolons.
SMTP USERNAME	is the user name that must be used in combination with SMTP PASSWORD eld. It is optional depending on your local SMTP conguration.
SMTP PASSWORD	is required by some SMTP servers. This eld is optional depending on your local conguration.

NOTE: You must check boxes next to the elds that are being updated.

Press ***Save Properties*** button to store new SMTP settings.

2.6.2 SNMP settings

Download qex.mib le from Netexitys website. You may import this mib le into enterprise consoles such as HP OpenView, Tivoli Enterpise Console, Nagios and Big Brother. In the ***Environmental Properties*** section check boxes next to the elds that you will be changing:



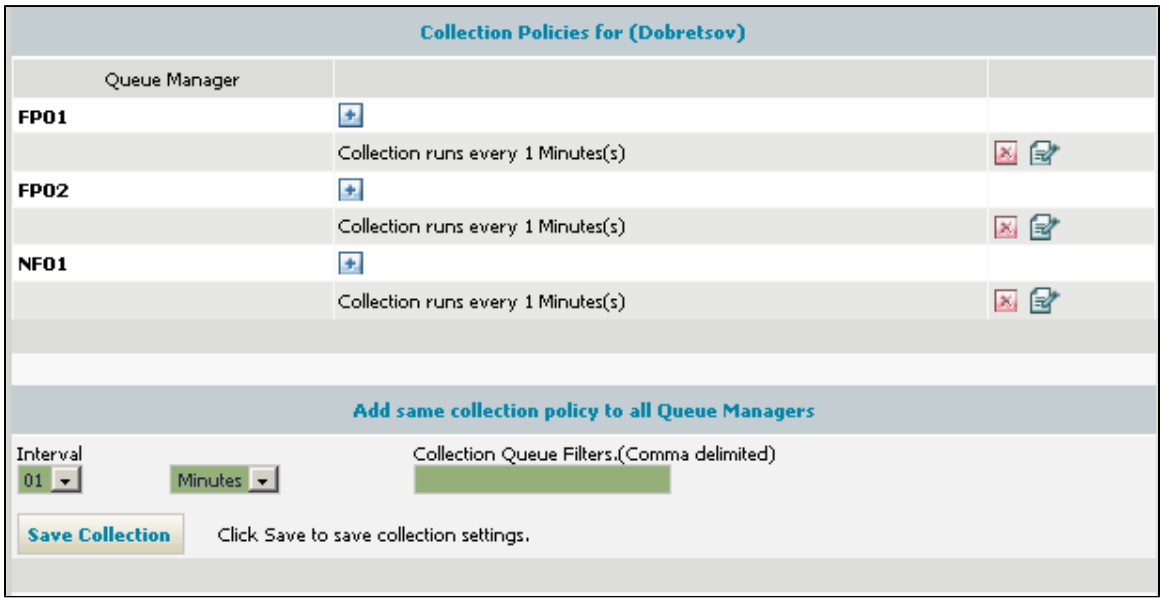
You must specify Server, port, SNMP version and community in order for Qex to send alerts via SNMP traps. Contact your SNMP administrator for more details.

NOTE: You must check boxes next to the elds that are being updated.

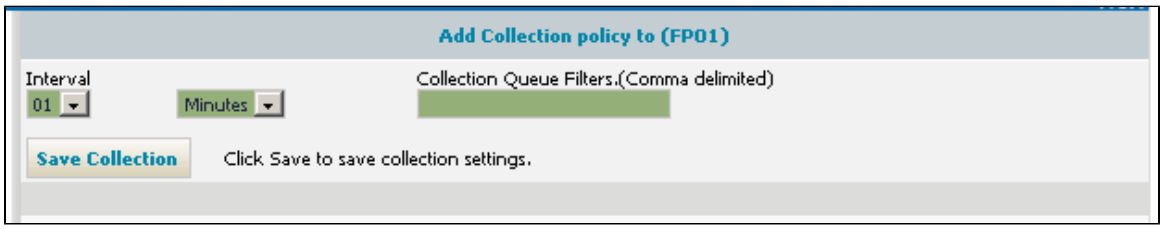
Press ***Save Properties*** to store new SMTP settings.

2.6.3 Data Collection

Data Collection provides a way to congure how often Qex will query queue managers performance data. Note that this value does not aect polling intervals of the monitors dened in Qex. In the Collection Policies section and Add same collection policy to all Queue Managers you can set the following data:



If it is important to see data on a minute by minute basis, congure collection to run every 1 minute. One collection policy can be applied to all queue managers at once by setting Interval in Add same collection policy to all Queue Managers and pressing ***Save Collection*** or click plus button next to the queue manager name to add specic collection policy for that queue manager:



Qex allows users to specify certain queues which should be excluded from having statistical data gathered and stored for those queues. There are two ways to add a lter to a collection policy. Click on the plus sign next to a collection policy and place a lter value into the lter box. You can specify multiple lters as comma delimited values, in addition you can use wild cards at the end of the lter like this SYSTEM* such a lter would prevent the statistical data from being gathered for any queue that begins with SYSTEM*

There is also a way to add lters to multiple queue managers at once by adding the lter directly from the collections page however the lter will not be displayed until you edit collection policies for specic queue managers.

> **Note**
> Even though after adding lters for certain queues those queues will still show up in reports, however they should have 0 values for statistics.

Alternatively, you can edit collection policies for specic queue managers by clicking on edit button next to queue manager

Press ***Delete*** button to remove selected collection policy.

Data Frequency Resolution
Consider a scenario where Qex collects performance data from some queue manager every 5 minutes. Within that interval some application enqueued 100 messages and another application dequeue all of those messages. Because Qex relies on the queue manager to keep track of stats it simply retrieves those counters at a collection interval, this activity will be recorded by Qex. Even if the collection interval is set to every 60 minutes and some application enqueues/dequeues 10K messages in one second, Qex will record that trac activity however it will not be able to show exactly when that occurred since it only retrieved counter values once an hour.

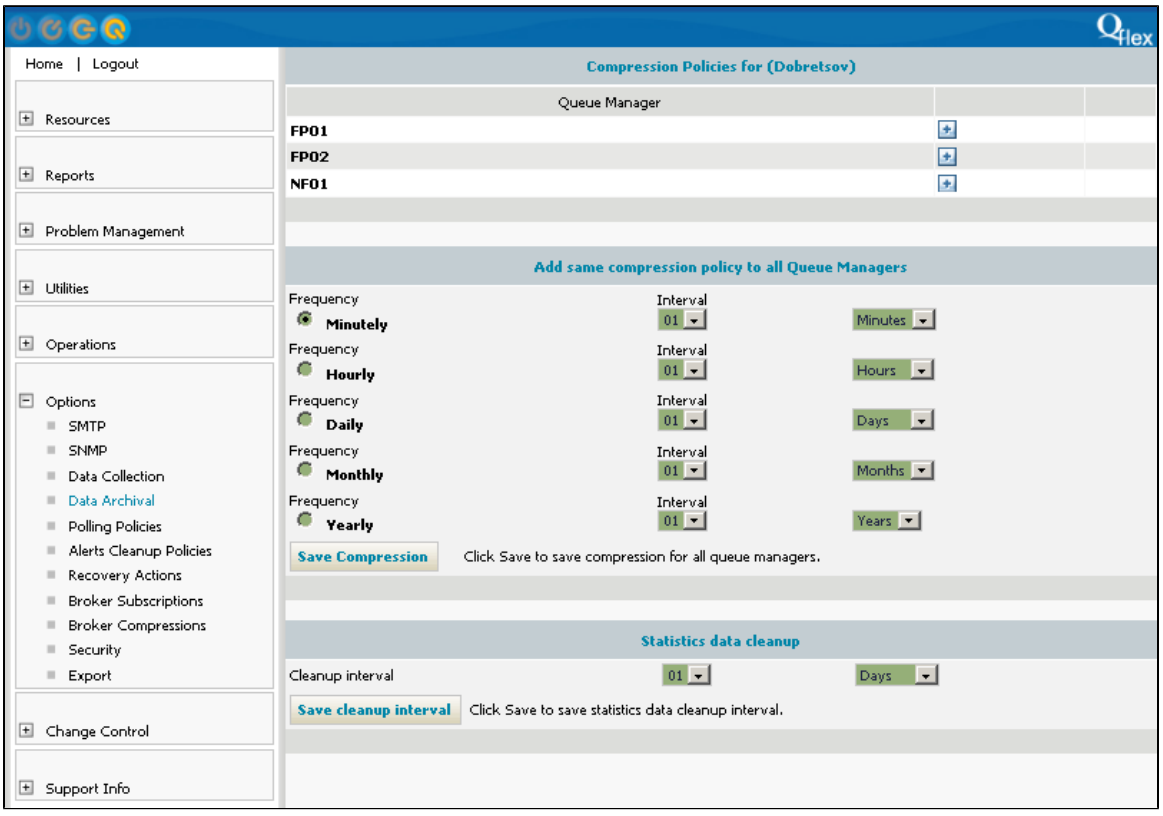
2.6.4 Data Archival

Performance data in Qex is stored using database records that have somewhat following format. ID1,...IDx, MSGS IN, MSGS OUT, START TIME, END TIME. START TIME and END TIME indicate for what period in time this statistics applies. If the dierence between START TIME and END TIME is a minute or less, we categorize that type of record as a Minutely Data. Same principle applies to hourly, daily, etc. types of data.

Data is archived in the straightforward fashion. To convert minutely data into hourly, Qex adds all MSG IN and MSG OUT values for the past hour. The Qex creates a new record with the START TIME of the EARLIEST minutely record and END TIME of the LATEST minutely record for the past hour, then places the MSG IN and MSG OUT values calculated in the previous step and creates a new performance record. Qex then deletes all the Minutely data for the past hour. So instead of having 60 records (1:00 to 1:01, 1:01 to 1:02) you now have one record from (1:00 to 2:00).

Qex allows you to have exibility to congure for how long you would like to keep each Type of data. For example, you can decide that you need hourly data for the entire month and your collection frequency is every hour. You can congure following Archival Policy. Frequency = Hourly, Interval = 1 Month. Qex will not archive this data into a monthly interval until it is one month old. Similarly, you can then congure how often to archive monthly data and so on. See Section Performance Considerations for more details.

You can add one archival policy to all queue managers at once in the ***Add same compression policy to all Queue Managers*** section:



After you set the compression policy press ***Save Compression*** button to apply policy settings.

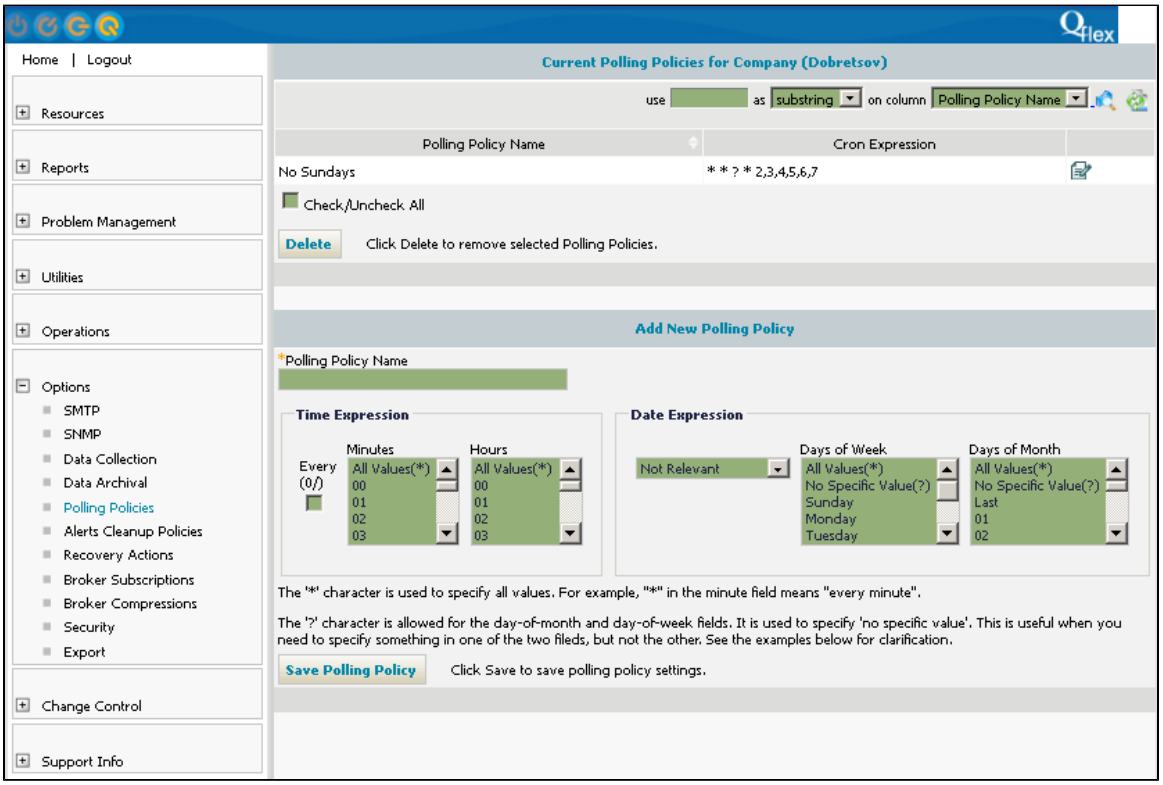
To add collection policy for a chosen queue manager go to ***Compression Policies for*** section, click on the plus sign next to a specic queue manager and edit the archival/compression policy for that queue manager. Nothing else needs to be done for the archival to go in the eect. As soon as you submit it, Qex archival thread will notice it and archive the data when necessary.

In the ***Statistics data cleanup*** section you can set cleanup interval in minutes, hours, days, weeks, months and years. Press ***Save cleanup interval*** button to store new settings.

Note: Qex Express will delete all the performance data that is more than 24 hours old.

2.6.5 Polling Policies

Sometimes running a monitor every 2 minutes or every 5 is not flexible enough. Consider a scenario where we have a back up of MQ server every Sunday between 3 and 6 AM. Since we do not want to be receiving alerts during those hours on Sunday, we want to make sure that the monitor is not ran then. In order to accomplish this we can create one or more polling policies in the ***Add New Polling Policy*** section and then associate those polling policies with the monitor:



First set ***Polling Policy Name***, then ***Time Expression*** and ***Date Expression***. Press ***Save Polling Policy*** button to store new settings.

To view and delete existing polling policies see ***Current Polling Policies*** section. To edit current polling policy click on edit button

Additional tutorial for cron expressions, can be found here

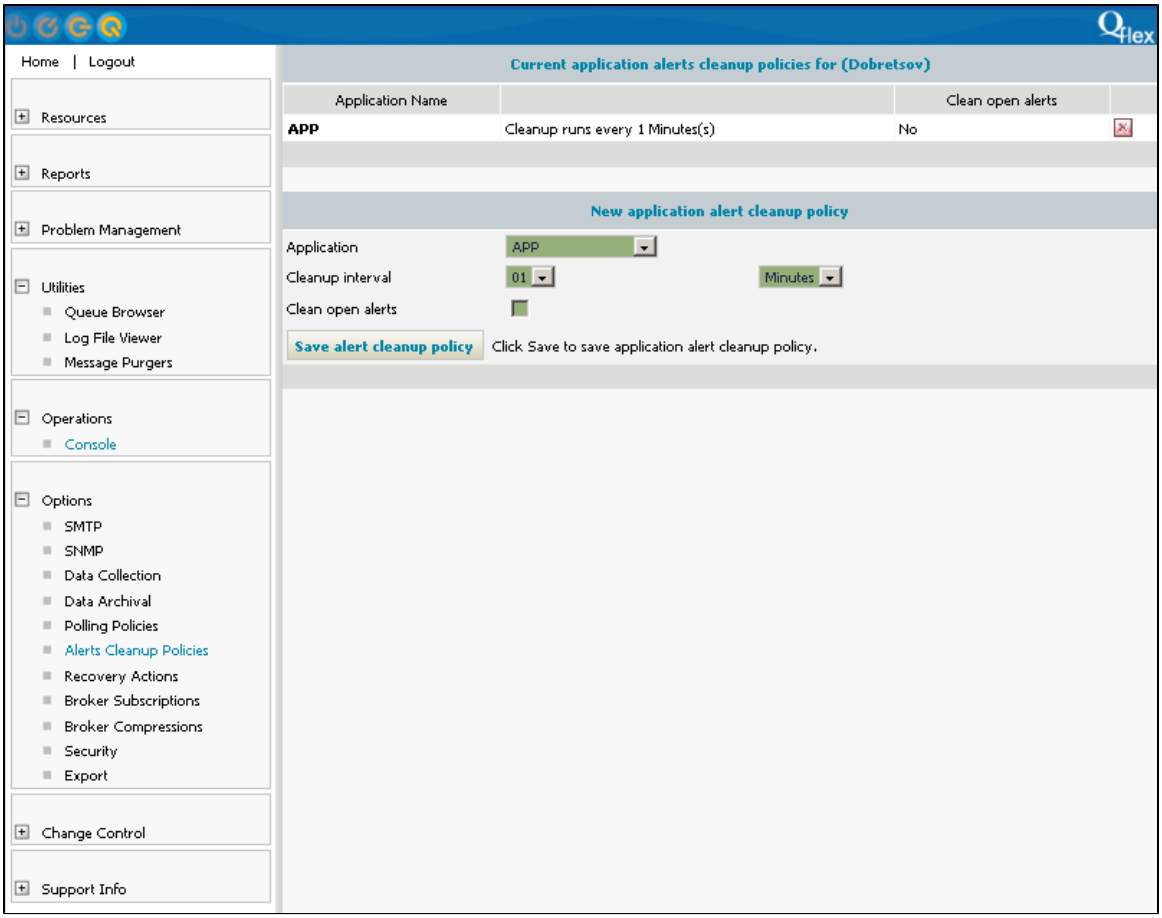
2.6.6 Alerts Cleanup Policies

Available only in QFLEX Standard version.

Alerts cleanup policies are used to automatically delete application alerts on time basis. Clean all outdated alerts to save your disk space.

Go to ***New application alert cleanup policy*** section and select application and cleanup interval. This scheduled task will remove all alerts older then cleanup interval.

If you check ***Clean open alerts*** checkbox, scheduled task will remove even active alerts:



In the ***Current application alerts cleanup policies for*** click on delete button to remove alert cleanup policy.

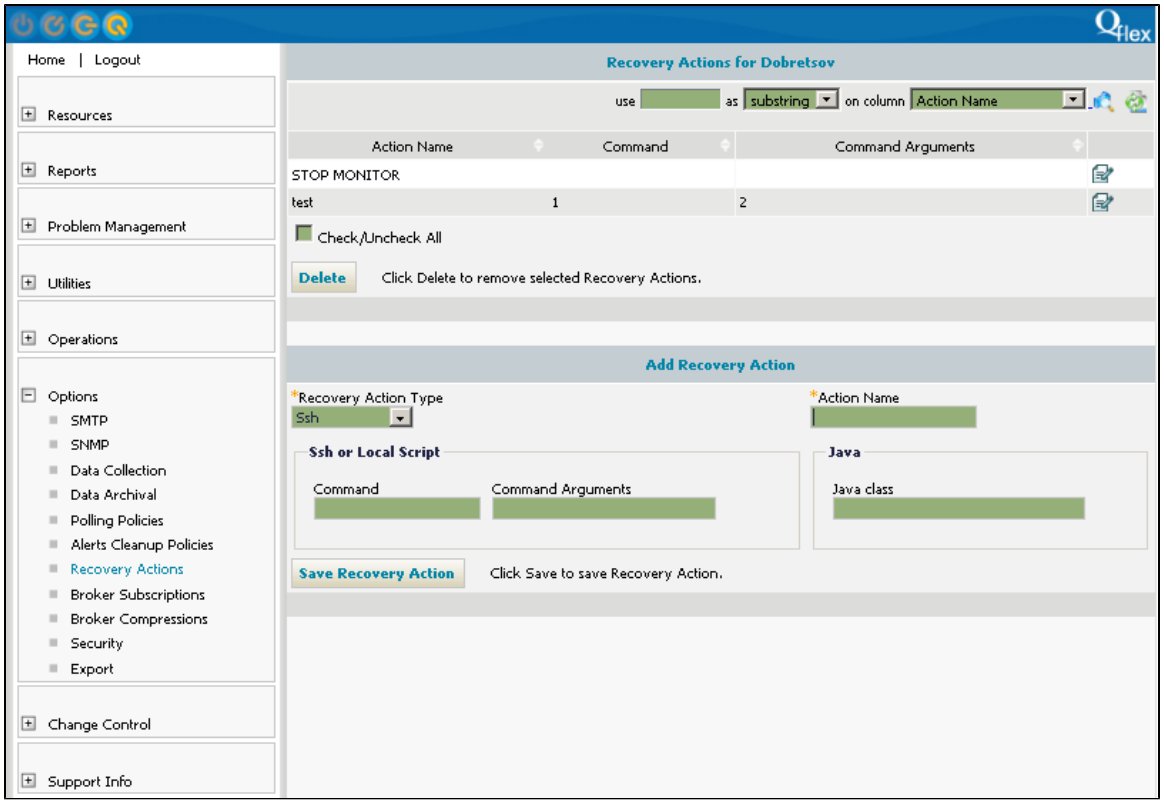
2.6.7 Recovery Actions

There are three types of Recovery Actions: Java, SSH and System script

- Currently java based recovery actions are in beta but in the future a simple XML based language will be released so that users can build their own recovery actions. There is one pre-installed recovery action called STOP MONITOR. This recovery action will stop the monitor. It can be used on a non-critical monitors to prevent alerting until the problem is resolved.
- SSH based recovery actions allow Qflex to execute arbitrary script on a queue manager server if Qflex can access that server via ssh. SSH based recovery action will only work if the queue manager monitored by Qflex runs on a unix based operating system such as AIX, Linux, HPUX or Solaris. You have to specify username and password when adding queue manager. Using the identity of that user, Qflex will log on to the operating system via ssh and attempt to execute command specified in the command window. Command has to be fully qualified e.g. /home/mqmadmin/bin/restartChannel.sh. Command arguments can be specified to be passed to the script e.g. /home/mqmadmin/bin/restartChannel.sh QM1.TO.QM2.
- System Script - local batch (.bat) or shell (.sh) script that will be executed by recovery action.

You can then associate monitors or monitoring templates with one or more recovery actions however for now the order in which the recovery actions will be executed cannot be controlled. And it cannot be established whether recovery action actually worked or not.

In the ***Add Recovery Action*** section you can set recovery action type, action name, for Ssh or local system script, set command and command arguments, and Java class in case of Java recovery action type:

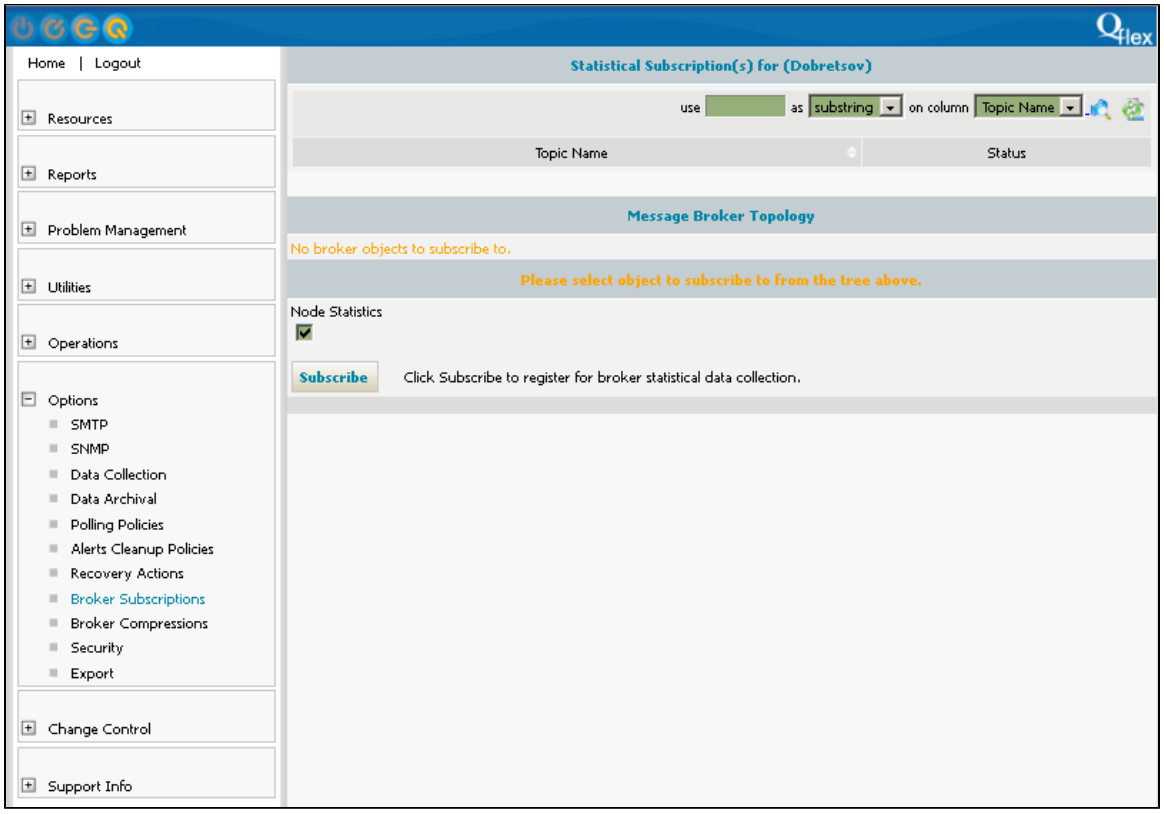


To edit existing recovery action click on edit button in ***Recovery Actions*** section.

To delete existing recovery action click on it or use ***Check/Uncheck All*** checkbox and then press ***Delete*** button.

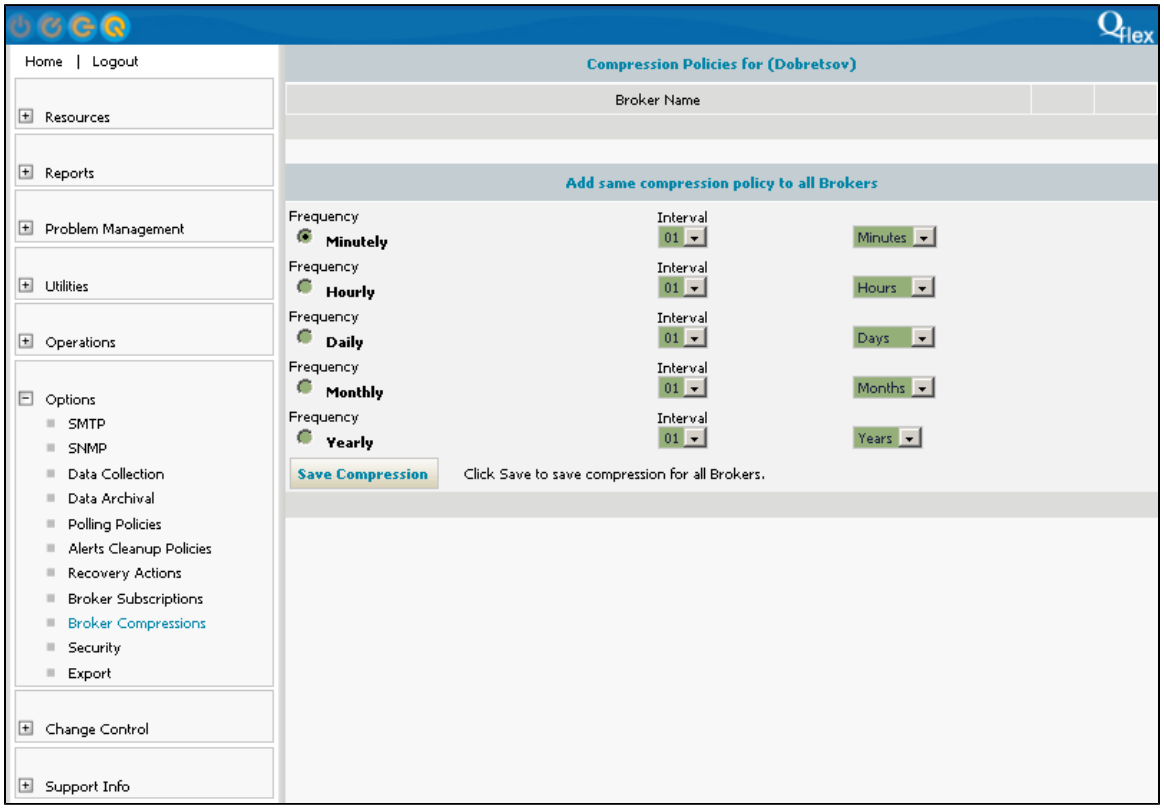
2.6.8 Broker Subscriptions

In order to turn on broker statistics, select the broker, execution group and ow name by expanding the topology tree and clicking on the appropriate object. Optionally click on the broker to subscribe for statistics on everything or click on execution group to subscribe for statistics for all ows in that execution group:



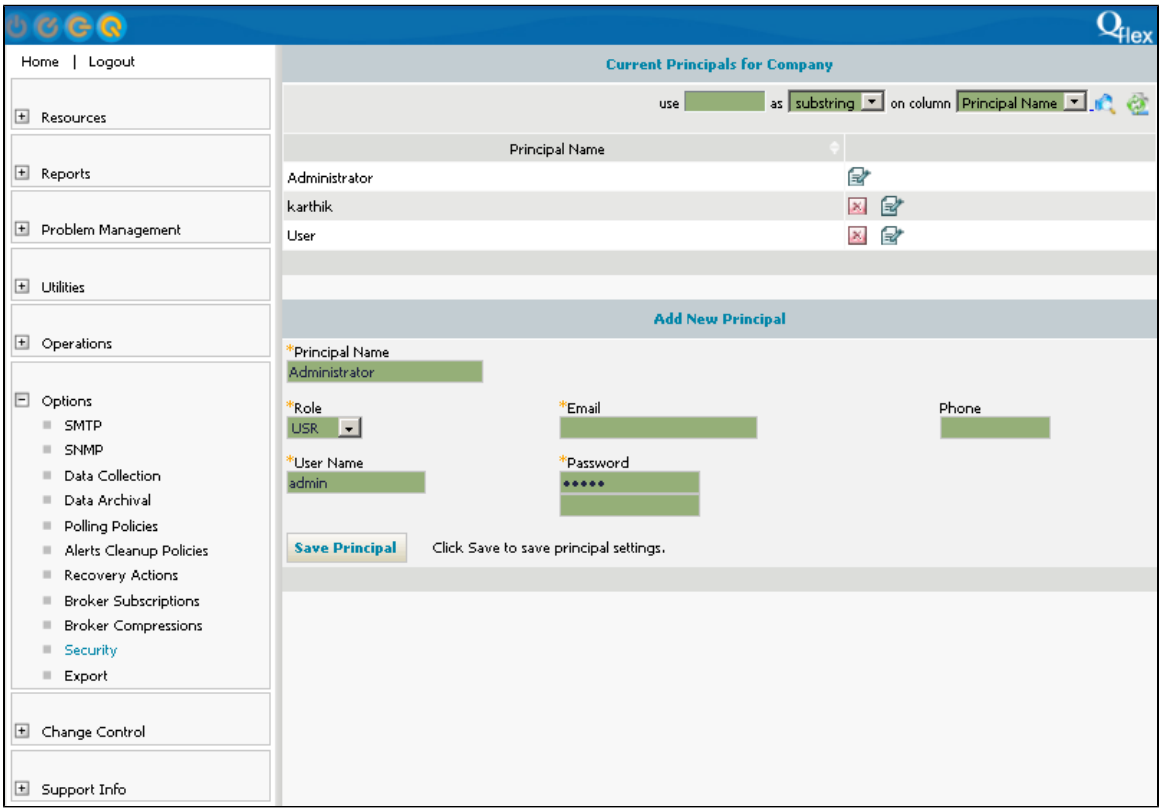
2.6.9 Broker Compressions

Qex Express discards all broker statistics that are older than 3 hours. However **Standard version** can be congured to support more exible long term statistical archiving similar to Queue Stats Archival. In Add same compression policy to all Brokers section you can set the following frequency of compression:



2.6.10 Security

In order to change Administrators information such as password or email navigate to ***Options*** then ***Security*** and click on the edit icon next to Principal Name in the ***Current Principals*** section. Change values to suit your needs and press ***Save Principal*** button:

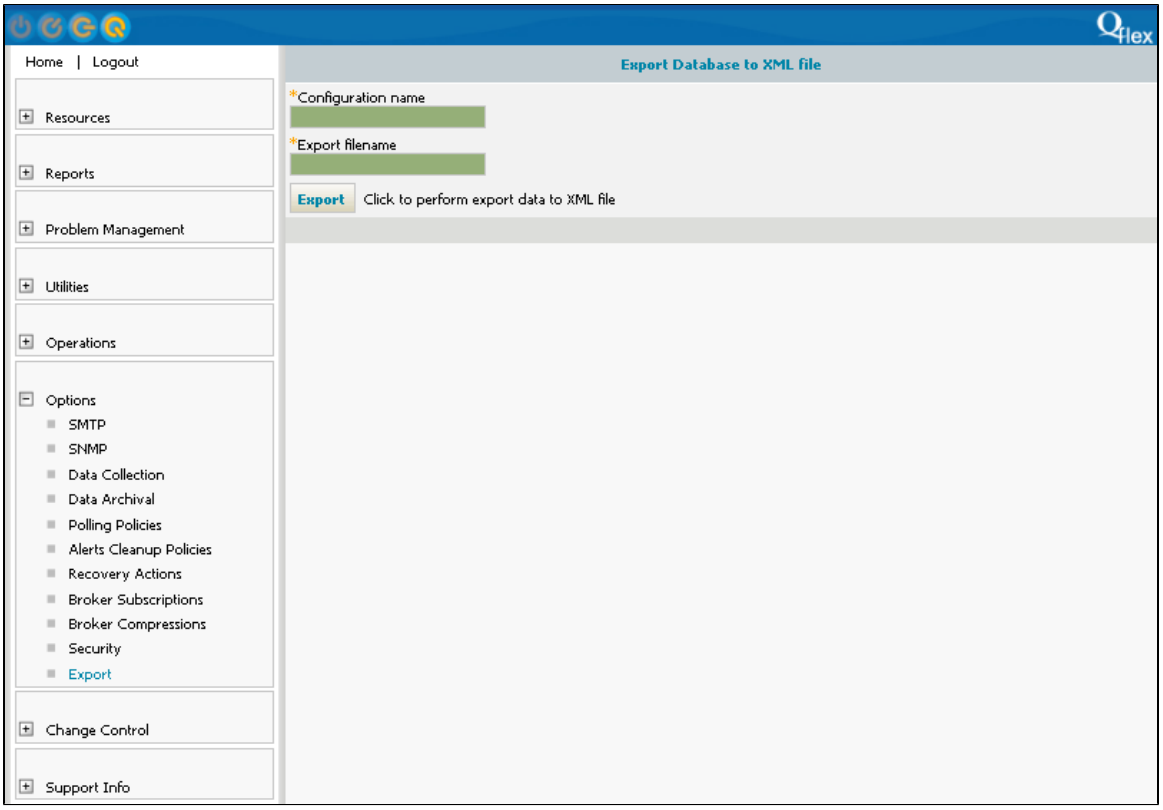


To create new user account go to ***Add New Principal*** section, set new data and press ***Save Principal*** data to store new settings. Click on delete icon to remove a user from Current Principals section.

Every time Administrator options are changed, you must supply the password in the second password eld.

2.6.11 Export

In cases when a back up of Qflex configuration needs to be preserved or when the same configuration needs to be replicated between Qflex environments (Development, Test, Production).
If you need to export your database to an XML file go to Options -> Export, set ***Configuration name, Export filename*** and press ***Export*** button:



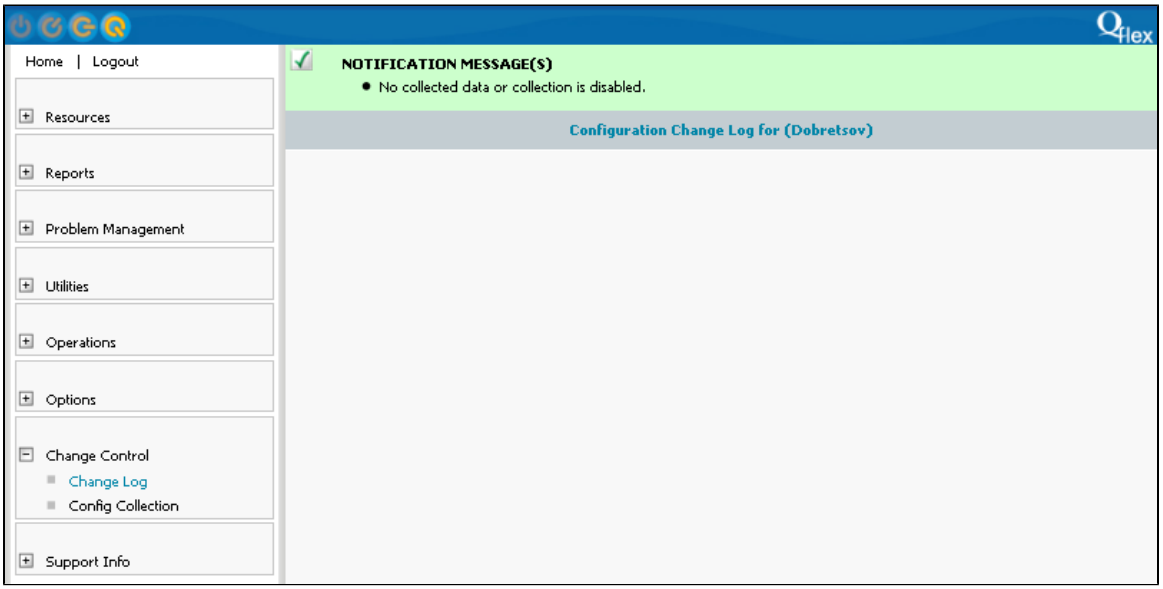
Exported configuration can be imported into newly installed Qflex during the first login.

2.7 Change Control

Qex can detect changes to MQ objects such as queue or a channel. In order to do that, cong collection has to be turned on.

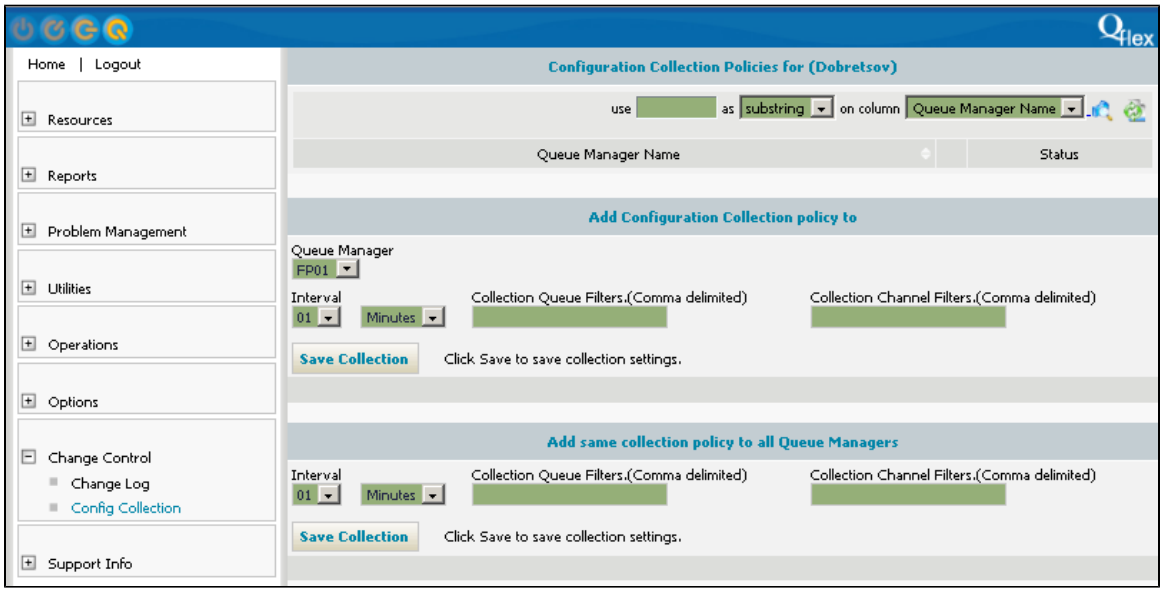
2.7.1 Change Log

To view configuration change log go to ***Change Control*** -> ***Change Log***:



2.7.2 Config Collection

To add configuration collection policy to a queue manager or add same collection policy to all queue managers go to ***Change Control*** -> ***Config Collection*** and set the following settings:



Note
For queue managers with over 500 queues, cong collection interval less than 10 minutes is not recommended as keeping track of object changes is a CPU intensive operation.

Once the the cong collection had been created and enabled, Qex will load an initial tree of all object definitions and assign a version to each object. With changes to objects Qex will detect them and assign a new revision to one or more changes that had been detected during the collection interval. Detected changes can be approved or rejected.

If the change is approved, Qex accepts that revision as a last approved queue definition. In case of multiple revisions, all revisions up to and including approved revision are approved. If the revision that is approved is not the latest revision, remaining revisions will remain outstanding and can be rejected. If a change is rejected queue is reverted to the last approved state.

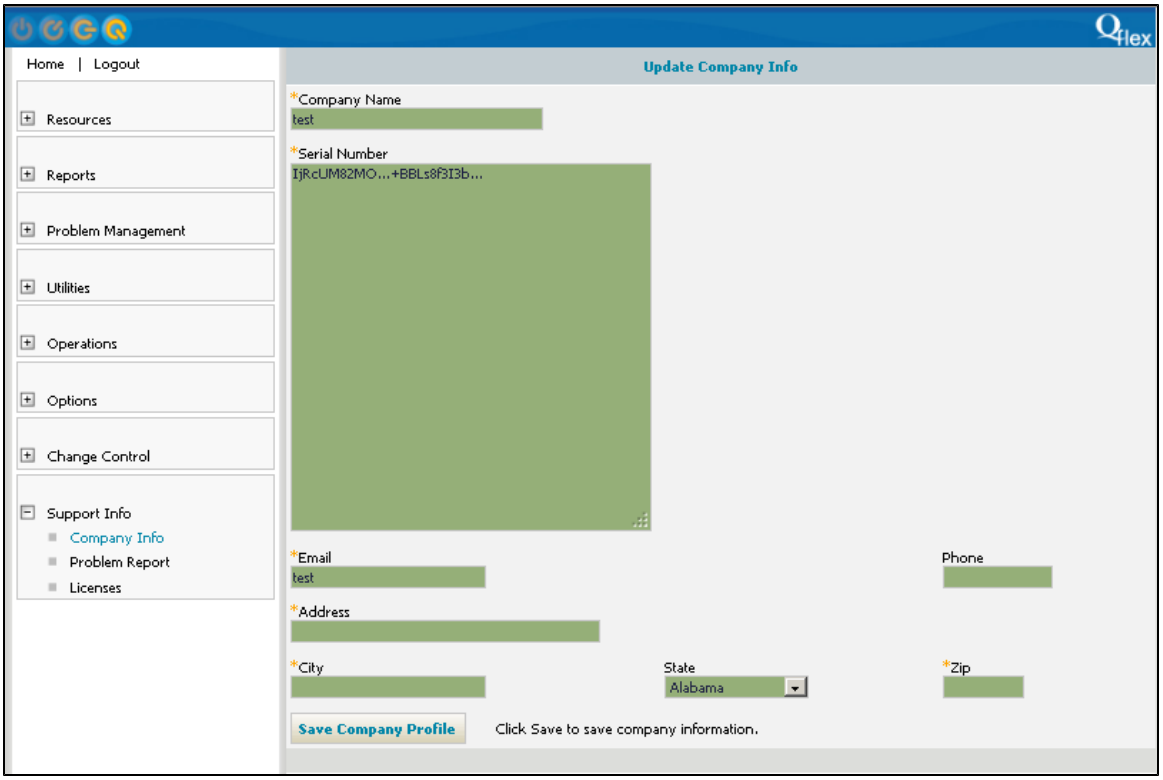
If multiple changes are rejected, all changes up to and including the rejected revision are rejected. If the revision that is rejected is not the latest revision, remaining revisions will remain outstanding and can be approved or rejected at a later time. Approval and rejection is not supported in Qex Express.

2.8 Support Info

In this section you can see information on company's info, problem report and licenses.

2.8.1 Company Info

To update the company's information go to ***Support Info*** -> ***Company Info*** where you can set the following data:



Press ***Save Company Profile*** button to store new settings.

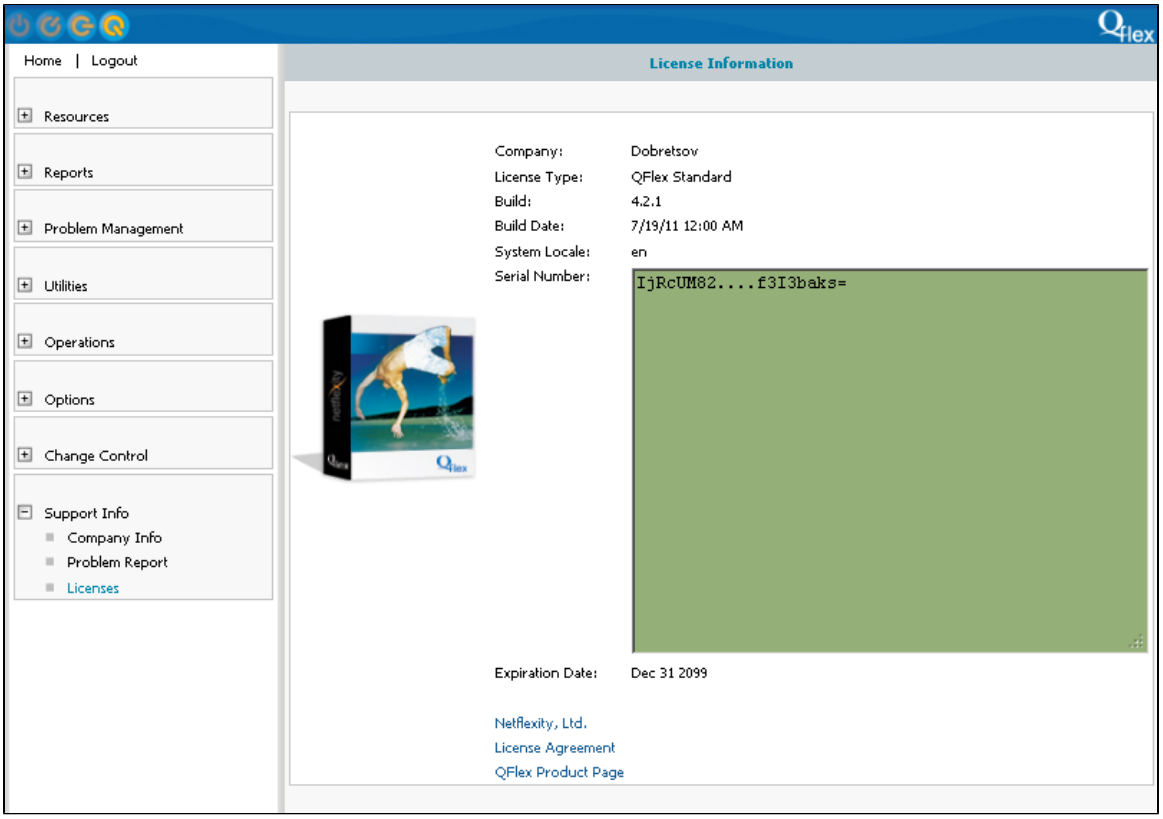
> **Note**
> It will be easier for Netexity to get in touch with you when you submit a problem. A serial number that you have received maybe updated here to switch to a full version of the Qex or to allow Qex to upgrade to a newer major release.

2.8.2 Problem Report

If you have identified a bug or other type of inconsistency in Qex, please submit a problem report via Qex built-in bug report form by navigating to Support Info then Problem Report. Fill out the necessary fields and attach necessary les to submit a problem. If you get a server error, please include compressed TOMCAT HOME/logs and C:\home\QFLEX\logs directories. The email message containing problem report will be sent to qex@netexity.com

2.8.3 Licenses

Qex licensing details can be obtained by going to ***Support Information*** then ***Licenses***:



Chapter 3. For business users

The following chapter shows how to operate and configure QFLEX for Business users.

3.1 Dashboard

This section shows how to use the following dashboard settings - Application Alerts and Message Distribution.

3.1.1 Application Alerts

To see distribution of Alerts in Application click on ***Dashboard*** and select from expanded menu ***application alerts***:

In the opened ***Current Application Alerts*** page you will see a graph with visual legend showing 4 types of alerts with different color: Failures, Problems, Warnings, Infos:

Alerts are generated by monitors that watch over observance of certain conditions (see details in QFLEX documentation).

Types of Alerts correspond to types of monitors.

3.1.1.1 Display and sorting options

By clicking on ***Chart*** or ***Table*** in the top right corner you can switch display mode from graph to table:

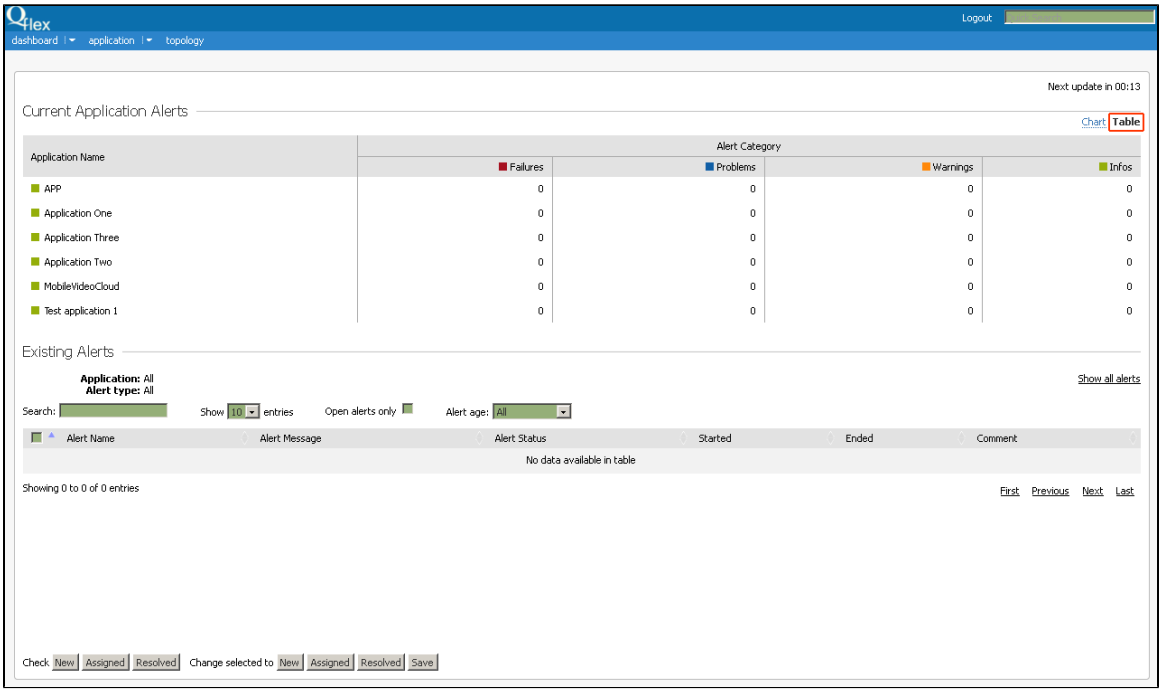
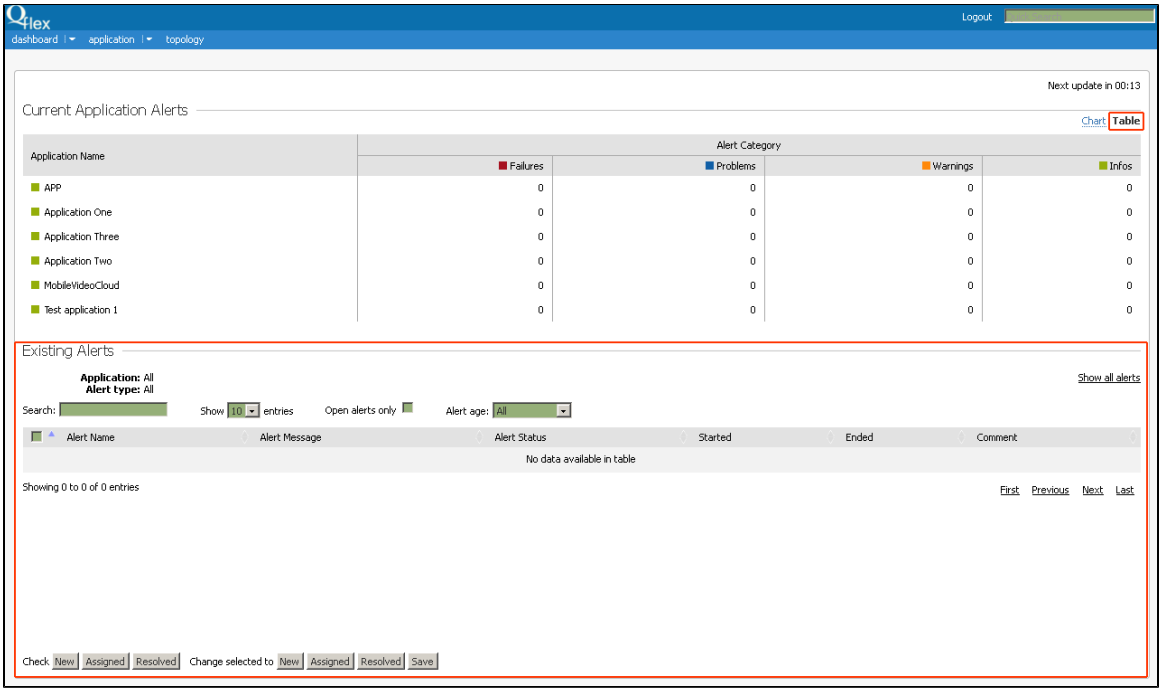


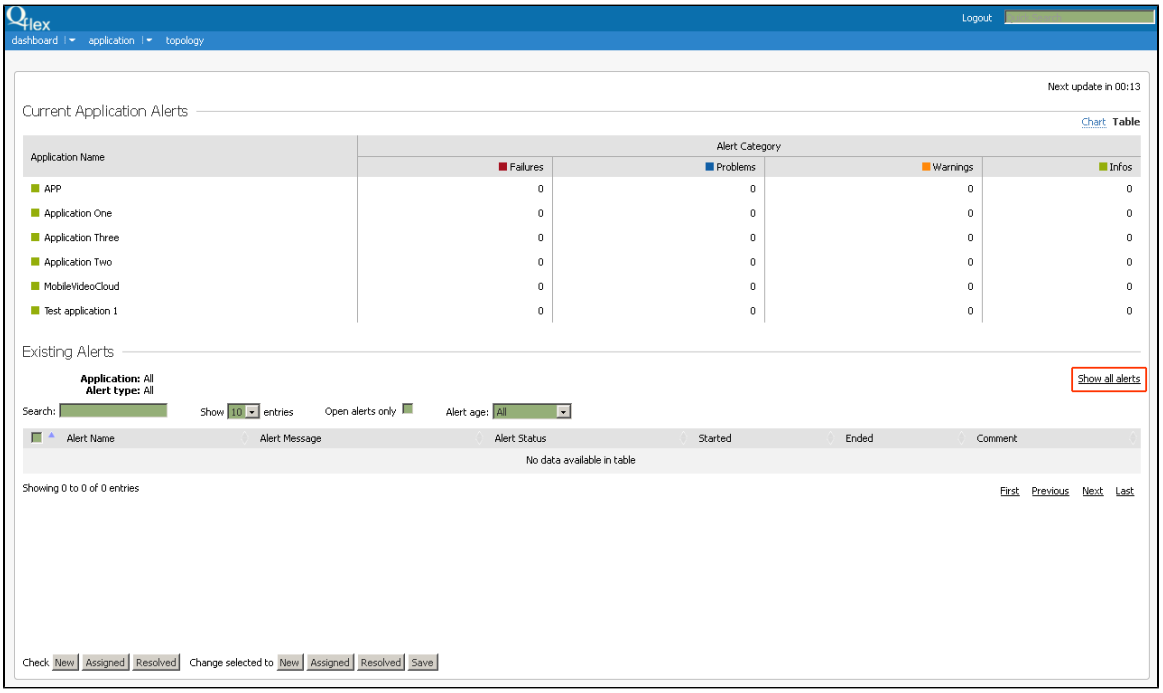
Table display mode offers more detailed information. It can be also used as filter for sorting data from the lower table ***Existing Alerts*** which displays the last 1500 (maximum) existing alerts:



Current filter status is shown on the top of the table:

Application:	All
Alert type:	All

You can sort data of the lower table by clicking on cells of the upper table (as well as column and row headers). Click on ***Show All Alerts*** in the right corner to reset the filter:



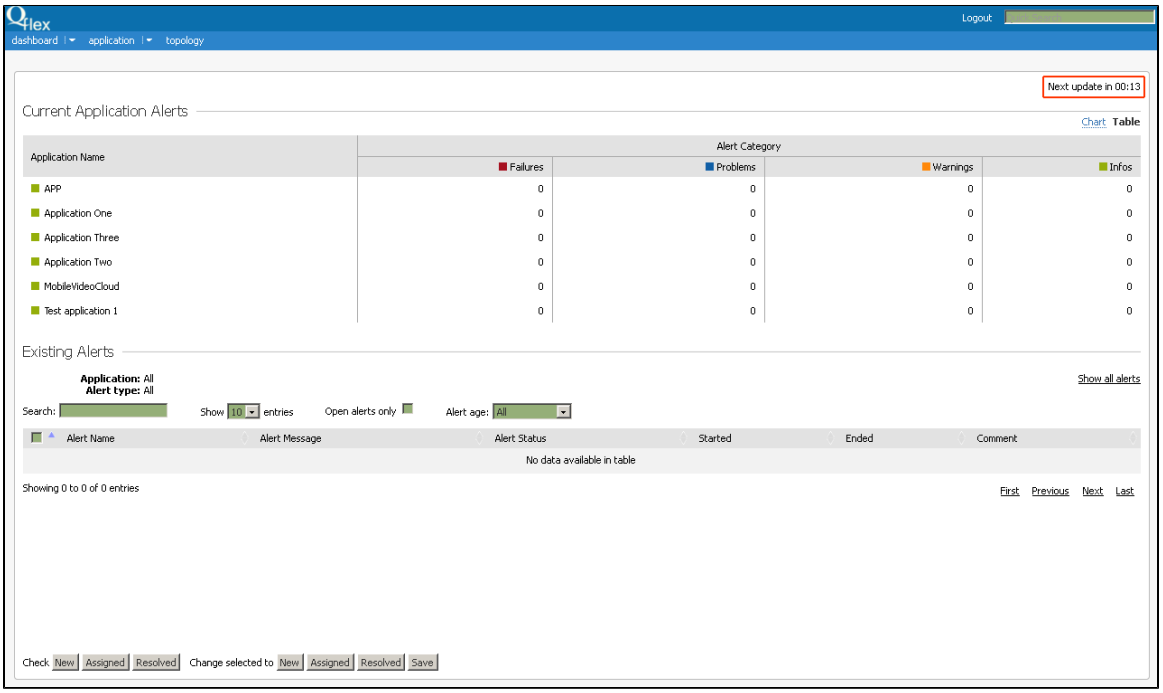
Additional filters:

Open Alerts Only - shows only Alerts with empty ***Ended*** field (i.e. not completed).

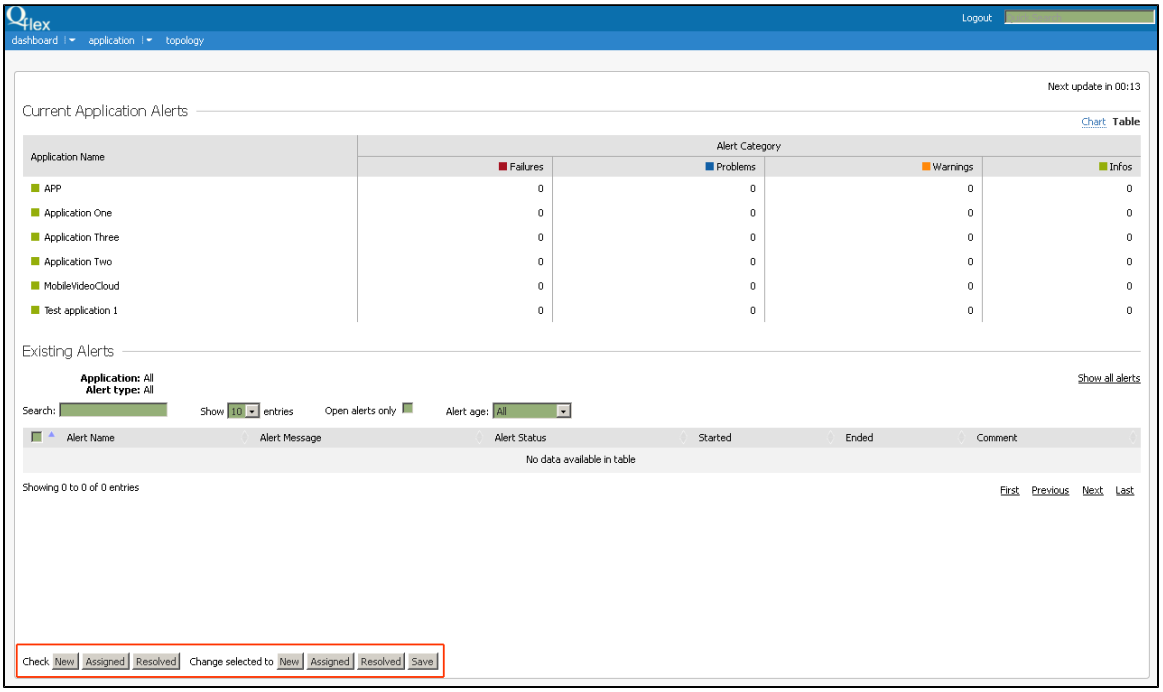
Alerts Age - shows all/for the last 24 hours.

3.1.1.2 Other options

The webpage is automatically updated each 3 minutes. Click on the time counter to update it manually:



You can change status of Alert (Each new Alert has New status) for single items by selecting necessary status from radio buttons (***New, Assigned, Resolved***):



Checkbox in the beginning of the line will be automatically checked - after the form is sent only checked Alerts will be updated.

Use Check ***New/Assigned/Resolved*** buttons to select several items, in this case all Alerts with corresponding status will be selected.

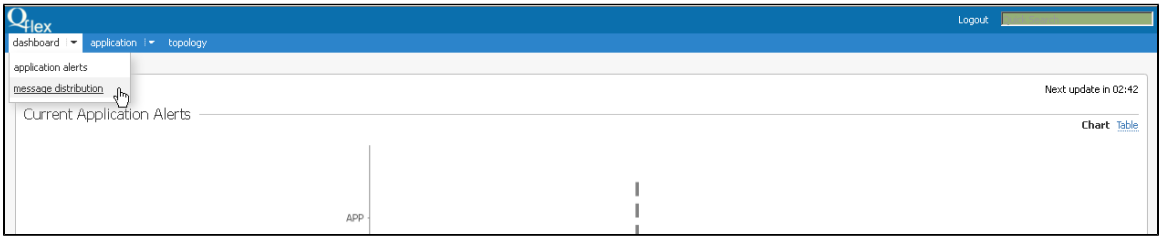
To change selected lines use buttons Change selected to ***New/Assigned/Resolved***. All selected Alerts will change their status depending on the pressed button.

Press ***Save*** button to store new settings.

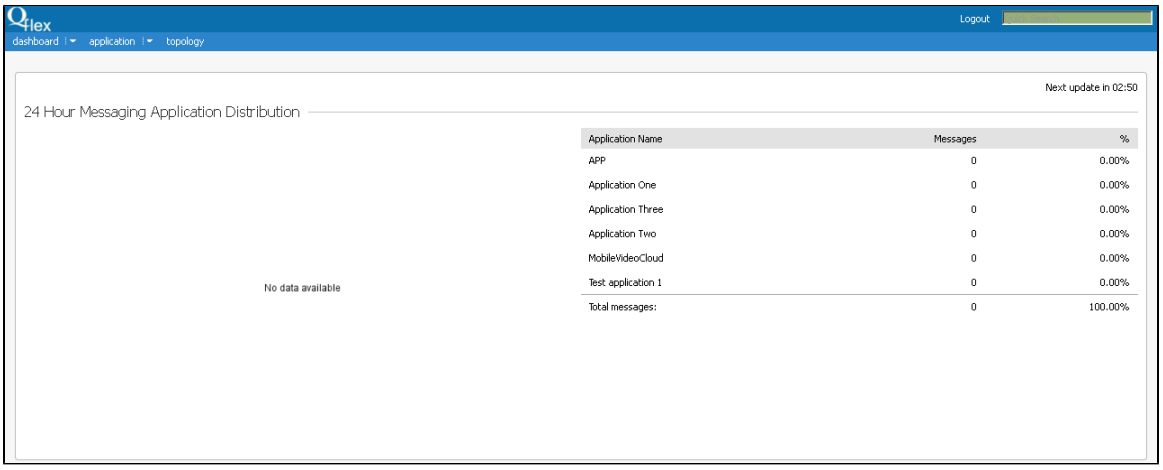
To edit comment to an Alert double click on ***Alert Name*** or ***Comment*** cell and type in new data in appeared window.

3.1.2 Message Distribution

To see chart of message distribution for a specific Application over the last 24 hours click on ***Dashboard*** and select from expanded menu ***message distribution***:

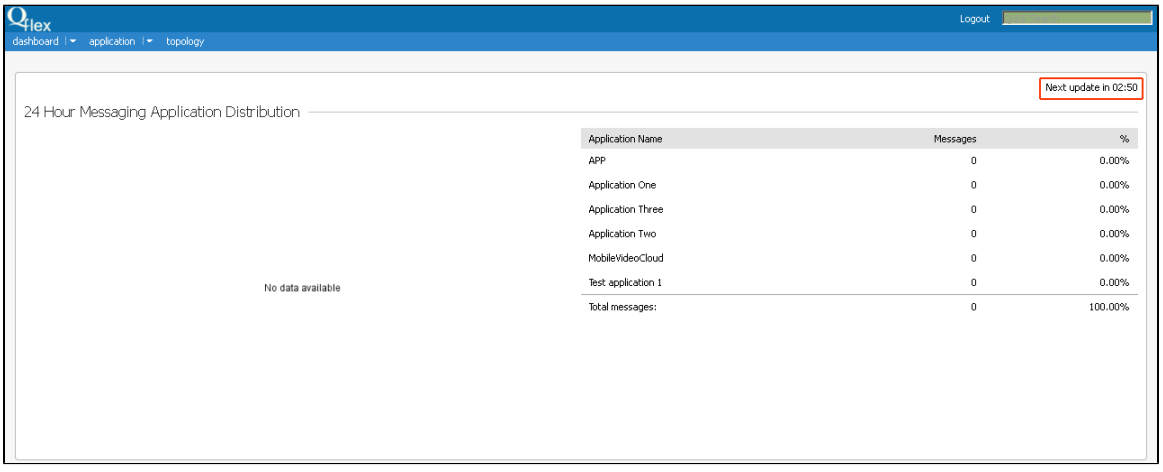


In the left part of the page you will see a graph in form of Pie Chart with legend, and in the right - explanatory table:



The table shows exact number of messages, percentage to total number and total number of messages.

Message distribution page is automatically updated each 3 minutes. In the upper right corner there is a counter showing remaining time until the next update:



Click on the time counter to update it manually.

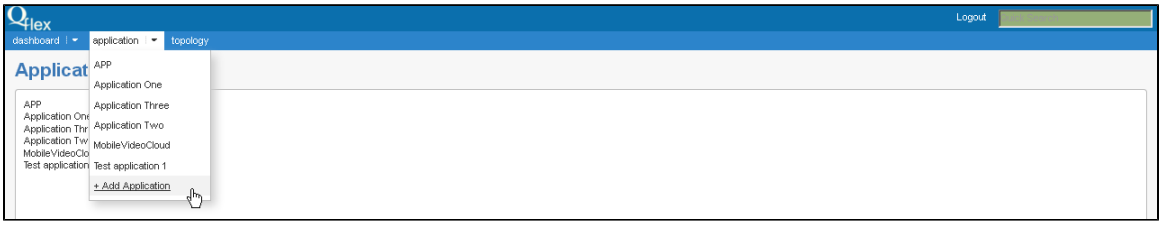
3.2 Application

In this section you will see how to add and edit applications as well as how to view application data.

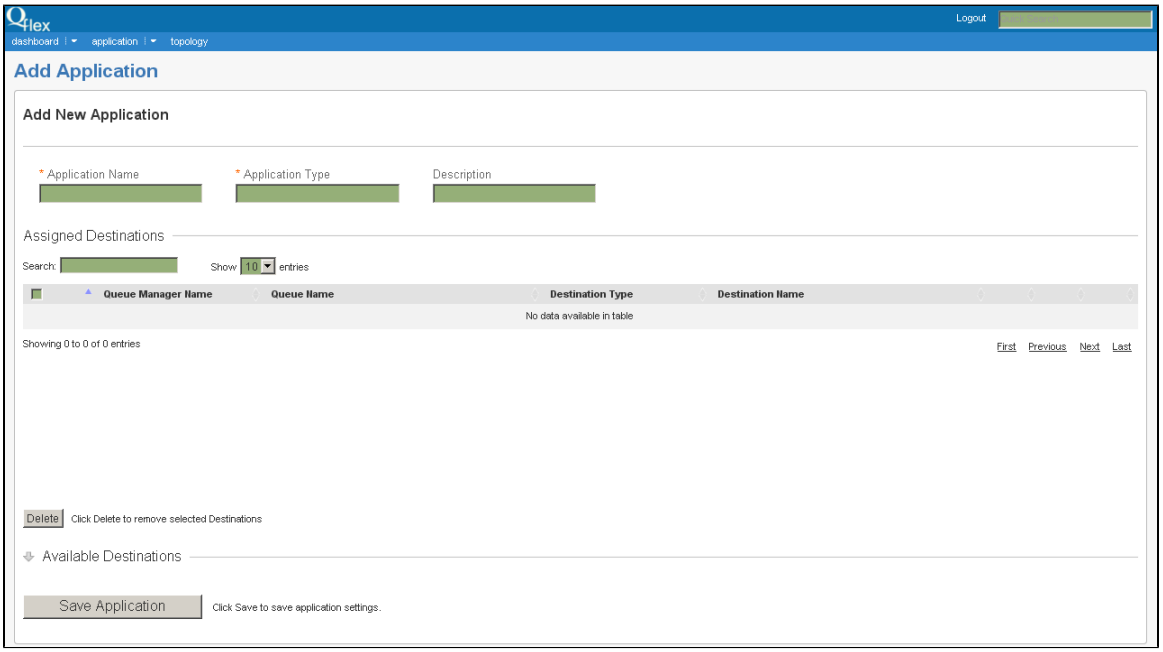
3.2.1 Adding New Application

Note
This page is available only for Administrators.

1. To add new application go to ***Application*** and choose from dropdown menu ***+Add Application***:

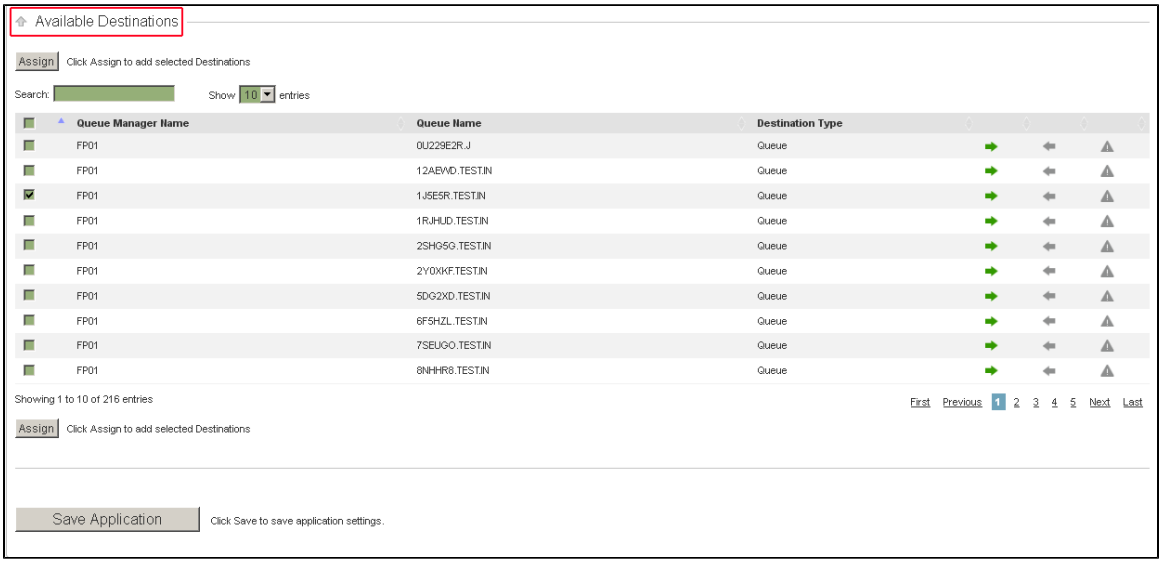


2. In the ***Add New Application*** page set the following application settings:

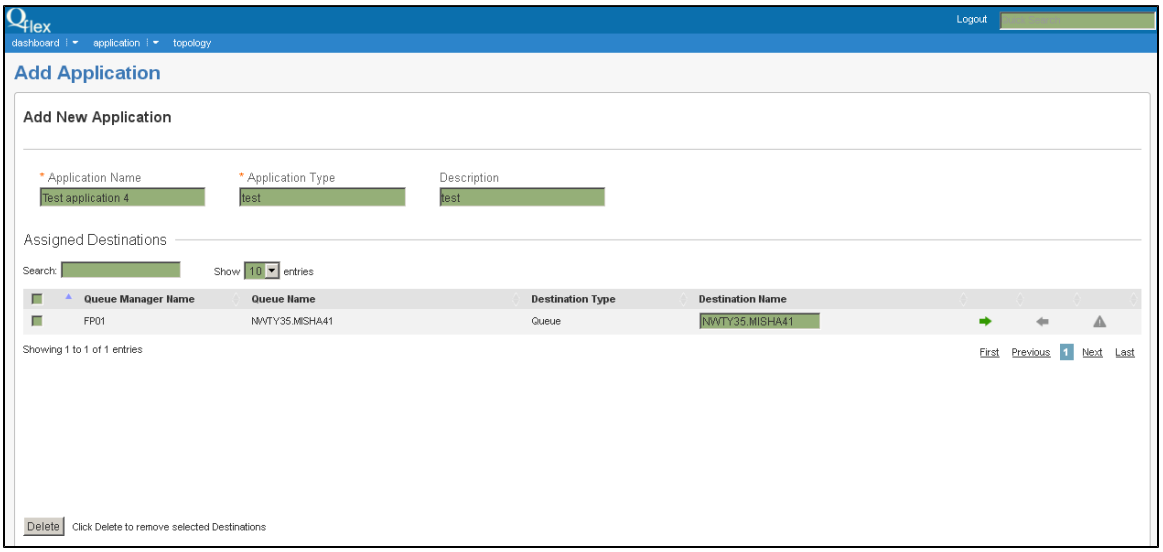


Application Name, Application Type - mandatory fields, Description (optional).

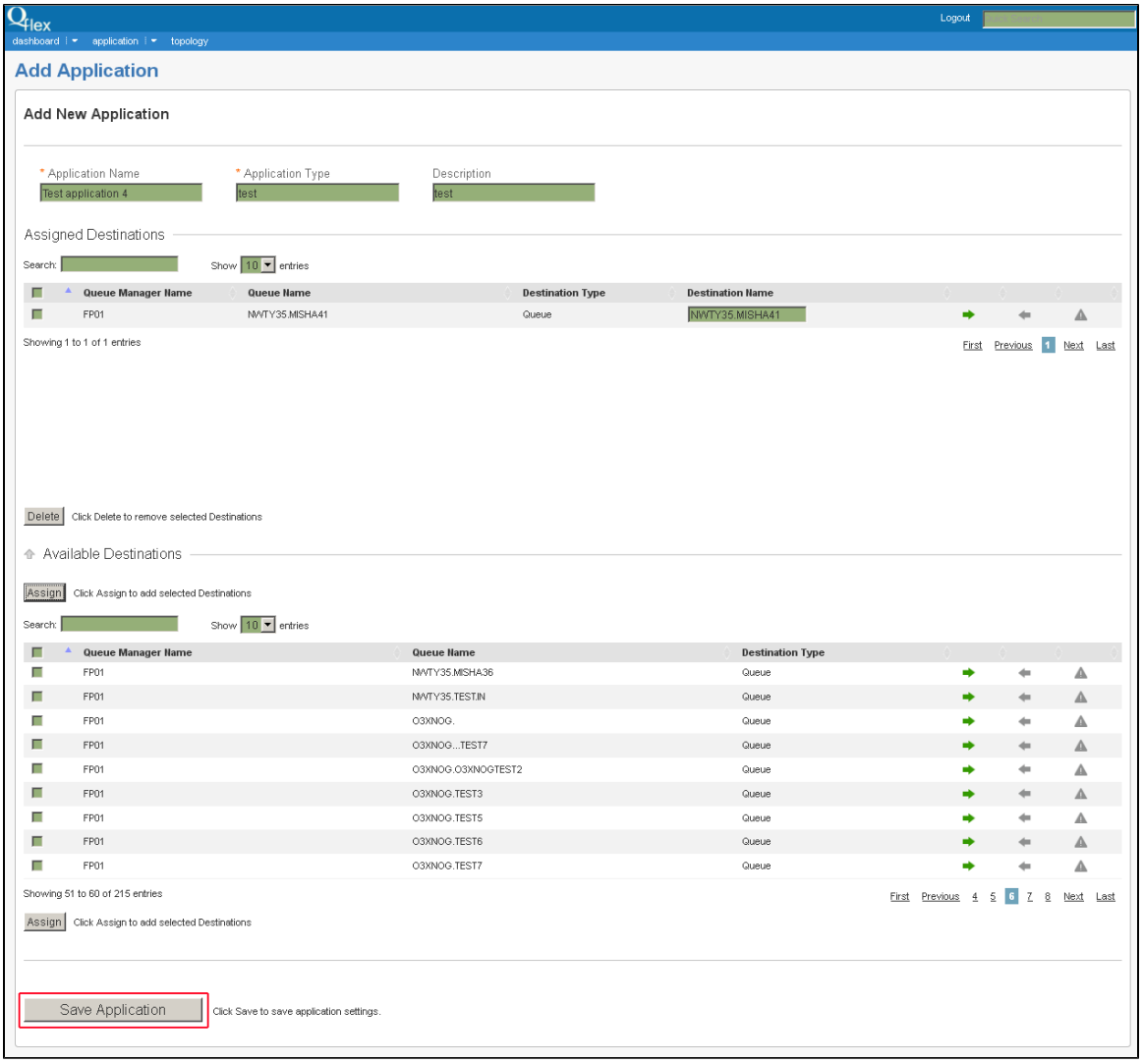
3. Click on ***Available Destinations*** to expand the table and add selected destinations first by checking them and then pressing ***Assign*** button in the top or bottom of the table:



4. After you press ***Assign*** button in the ***Available Destinations*** section you will see the Queue Manager assigned to your new application in the ***Assigned Destinations*** table:



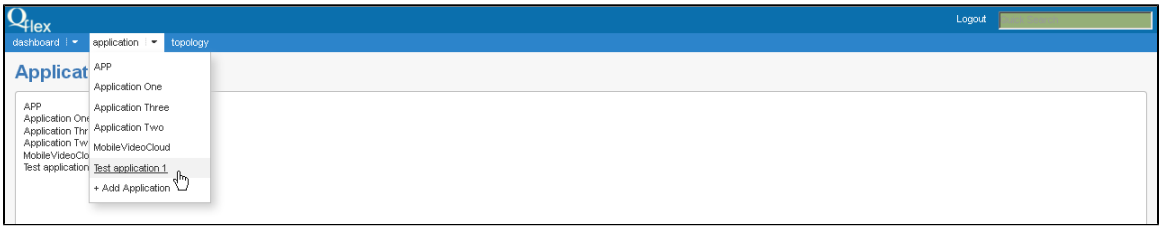
5. Press ***Save Application*** button to save new application settings:



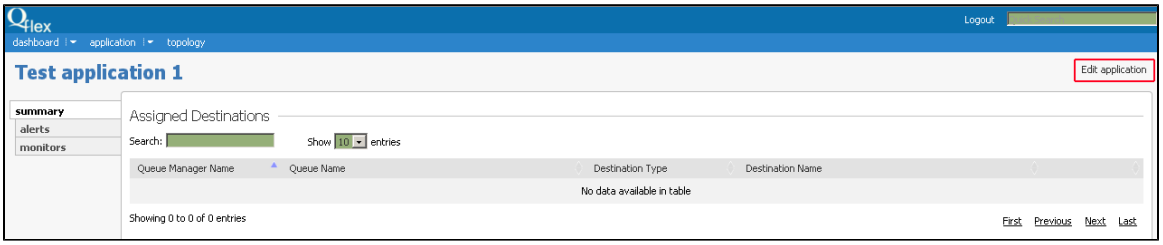
3.2.2 Editing Application

> **Note**
> This page is available only for Administrators.

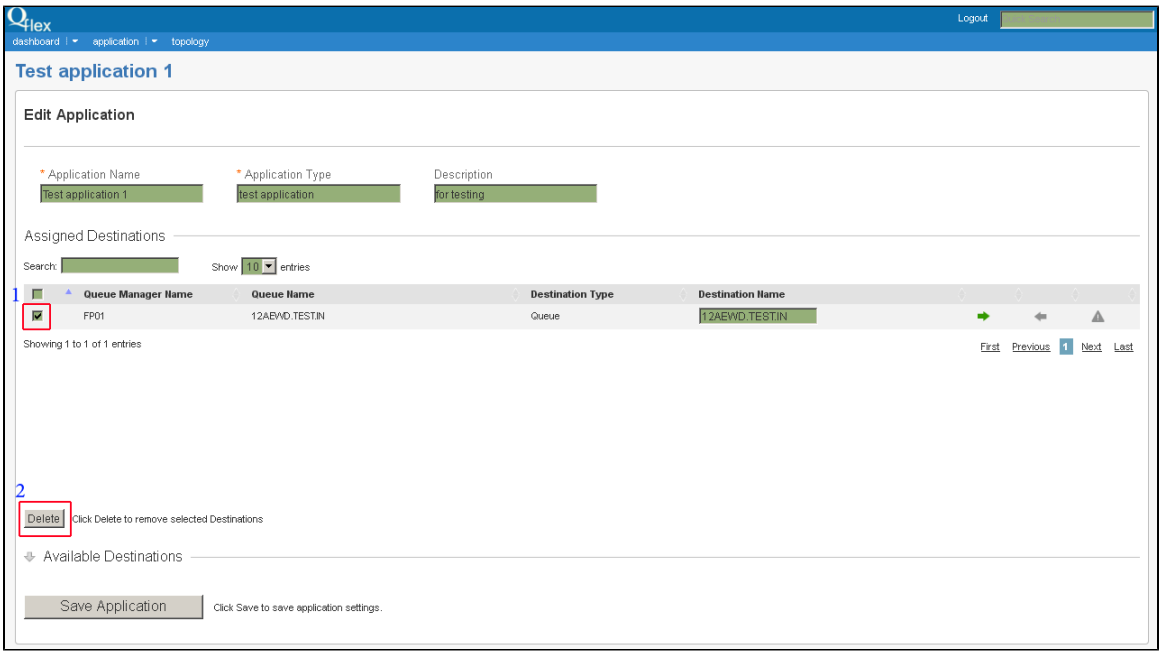
1. To edit application settings go to ***Application*** and select from dropdown menu application you want to edit:



2. Then click on ***Edit application*** in the top right of the data summary page:



3. Here you can modify ***Application Name, Application Type*** or its ***Description***:

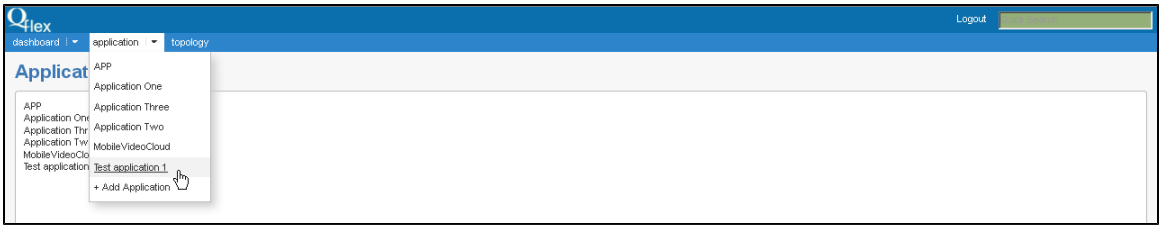


To detach a Queue Manager in ***Assigned Destination*** table check it (1) and then press ***Delete*** button (2).

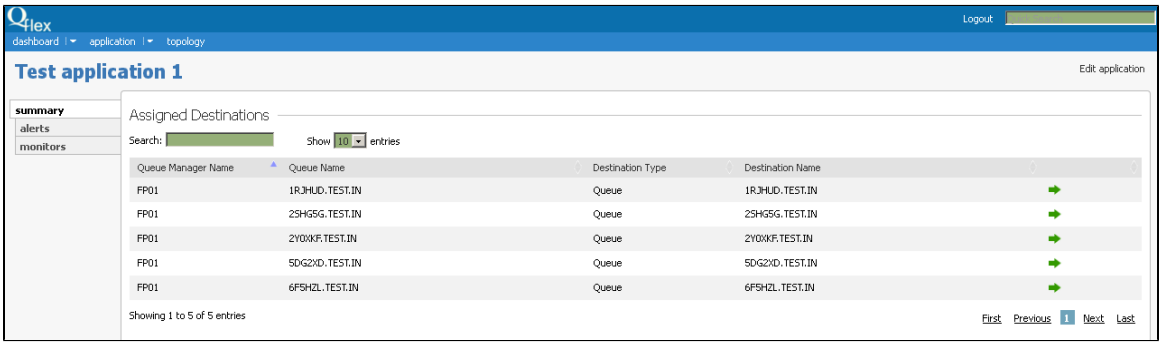
Then press ***Save Application*** button to save new application settings.

3.2.3 Viewing Application Data

1. To view data for an application go to ***Application*** and choose one from dropdown menu:



2. There will be 3 tabs: ***Summary***, ***Alerts*** and ***Monitors***:



Summary tab shows list of assigned destinations where the last column displays direction (input, output or error).

Alerts displays list of alerts for this application.

Monitors tab shows list of monitors.

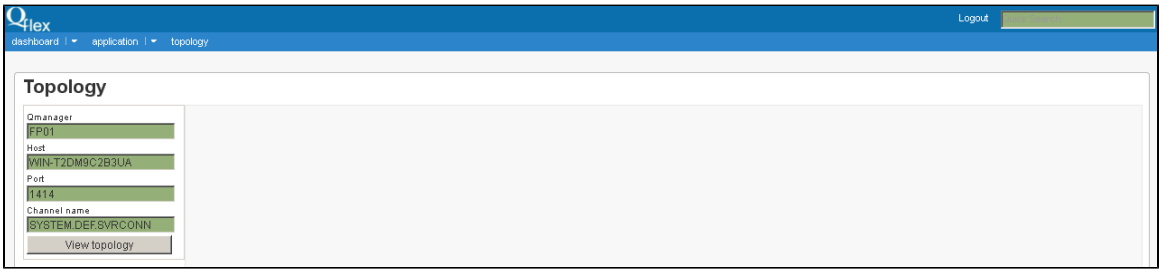
3.3 Topology

In this section you can see network configuration data obtained by scanning Qmanagers.

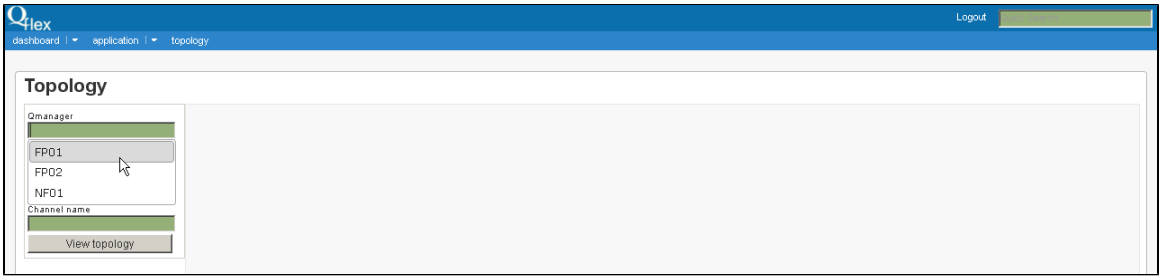
3.3.1 Choosing topology settings

1. Click on ***Topology*** on the top of the page:

2. Type in Qmanager name and press enter on your keyboard - all other fields will be automatically filled in with corresponding data:



If you press down arrow on the keyboard with active QManager field, a list of all QManagers will appear and all fields will be automatically completed:

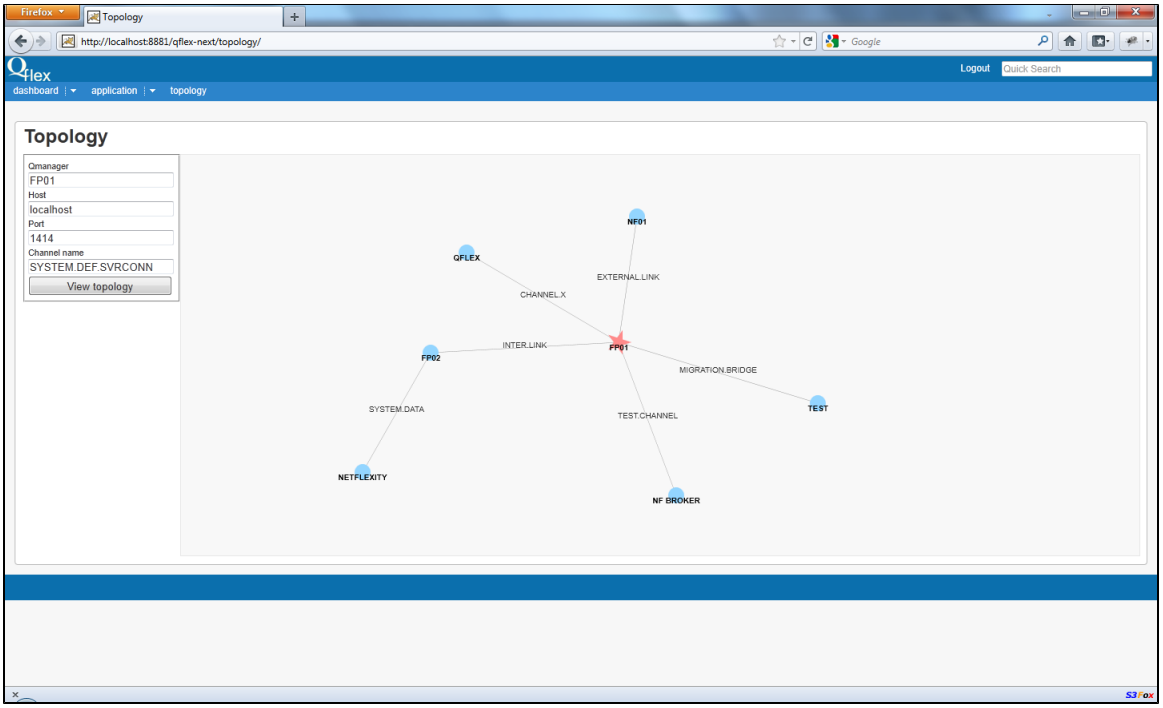


Press ***View topology*** button.

3. The scanner will search all Channels connected to this QManager. If in Channel's service data there is information on other QManager, then the system will try to connect to it and scan its Channels. The process is finished when all Channels are scanned.

3.3.2 Topology display options

1. Topology is shown as a graph where nodes represent QManagers and links between them - Channels:



2. QManager that was used as a starting point for search is represented by a star, other QManagers are marked by circles. Drawing algorithm is distributing the nodes in most optimal way.

3. If needed you can drag and drop the nodes to change automatic order.

4. Move mouse wheel to change the topology scale.

> **Note**
> Depending on configuration of the scanned network the scanning process can take some time.

Building QFLEX 4.2.0

Building QFLEX 4.2.0 is easy.

1. Checkout sources for netflexity project.

2. Use mvn clean install spell for all projects.

3. Start with qflex-next/ws, qflex-next/ui, netflexity/common etc.

4. The last project you have to compile is qflex-web-28-04-2010

5. The final step is build assembly.

qflex-installer is the project responsible for this task.

There are 2 profiles: x64 and x86

Use

mvn clean assembly:assembly -P x64

and

mvn clean assembly:assembly -P x86

6. After completing task there must be 2 files in target folder: ***.zip and ***.tar

7. Upload these builds after each assembling to amazon S3 bucket called qflex.