Informix HQ Monitoring

1. About Informix HQ

InformixHQ is a modern web console for visualizing, monitoring, and managing your Informix server instances. InformixHQ provides critical performance management capabilities, monitors key performance metrics and tracks how efficiently Informix is running your workload. It is a monitoring system that feeds directly from a system of customizable alerts to be able to receive an alert whenever a problem occurs in a database server instance. With InformixHQ is you can manage and monitor as many Informix database server instances as you need.

HQ comprises two pure Java applications (server and agent). The server program contains an embedded Jetty Web server. Java Runtime Environment (JRE) 1.8 .There will be an agent per IDS instance, but you only need one server accessing all of them. **Only IDS 12.10 and 14.10 are fully supported with HQ** as it uses the BSON data type. Once you have installed IDS, you should find directory "$INFORMIXDIR/hq" exists unless it's an older 12.10 version.

1.1. Architecture

`InformixHQ` consists of three distinct pieces that come together to give you a comprehensive monitoring and administering experience for Informix.

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- **InformixHQ Server**:
    - Jetty web server.
    - Provides a REST API for accessing Informix servers.
    - Monitors and administers many Informix database servers.
    - Connects directly to Informix databases servers.
    - Connects to the `InformixHQ` agents.
- **InformixHQ Agent**:
    - Lightweight monitoring agent based on Java.
    - Installed alongside each of your Informix database instances.
    - Only needs read access to database server.
    - Can perform native command execution to gather OS statistics as well as database statistics.

2. Informix HQ Server Setup

We firstly need to get the HQ server running. It is more convenient to run it on a machine where IDS is already installed, but you could host it on an entirely separate machine if preferred. Currently it is hosted on **ssh informix@adetrmdb1.**

In the "hq" directory as user "Informix", create a copy of the server properties file, and make one mandatory change (plus any others you need) as in this example:

$ cp -p informixhq-server-example.properties informixhq-server.properties
$ vi informixhq-server.properties
 #initialAdminPassword=
---
initialAdminPassword=******

We can check the option of the script InformixHQ.sh as below

./InformixHQ.sh

```
informix@adetrmdb1:/opt/informix/IDS/14.10/hq> ./InformixHQ.sh

Command: InformixHQ
This command starts/stops InformixHQ Server and Agent.

Syntax:
InformixHQ startserver|startagent [encoding=<value>] [jvmmemx=<value>] [jarfile=<value>] [propfile=<value>]
InformixHQ stop <processid>
InformixHQ stopserver
InformixHQ stopagent [properties filename search string]
InformixHQ list [filename search string]

startserver        : Starts InformixHQ Server service
startagent         : Starts InformixHQ Agent service
stop               : Stops InformixHQ Server/Agent service with processId
stopserver         : Stops InformixHQ Server process
stopagent          : Stops InformixHQ Agent process (default all processes or filtered list if matching filename search string found)
list               : Lists InformixHQ running processes (default all processes, filtered list if matching filename search string found)
encoding (Optional) : Default value is utf-8
jvmmemx (Optional)  : JVM's default value will be used If not specified
jarfile (Optional)  : Default is informixhq-server.jar for startserver option and informixhq-agent.jar for startagent option.
                      For user provided filename, it must contain keyword 'informixhq' and it should end with .jar
propfile (Optional) : Default is informixhq-server.properties for startserver option and informixhq-agent.properties for startagent option.
                      User can provide any custom name to properties file

informix@adetrmdb1:/opt/informix/IDS/14.10/hq> 
```

Step1: To start InformixHQ Server use below command.
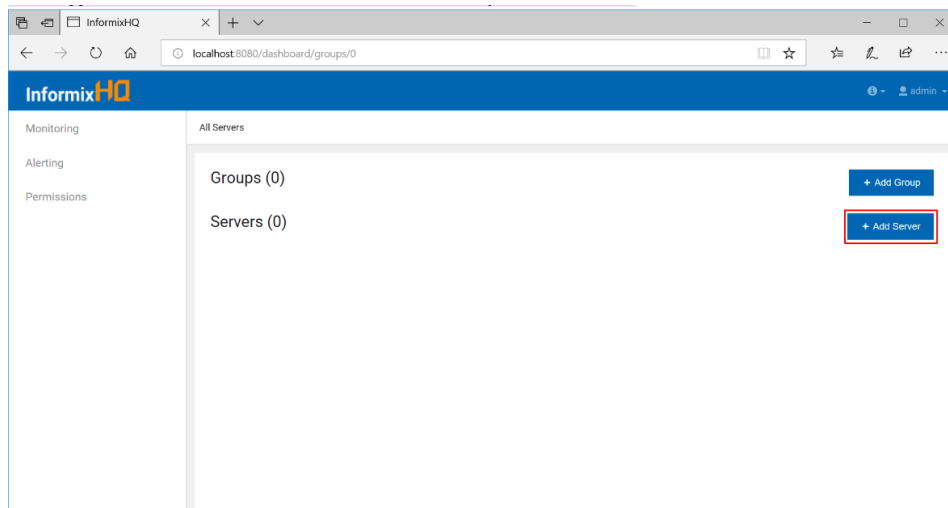
./InformixHQ.sh startserver

Step2 : To add the server in Informix HQ follow below steps.

Root Group Production Add Server Server Name Hostname Port Number Username Password.

First, we need to click on "Add Server" to add the server.

(**NOTE:** We need Admin privileges to add any server or group)

It will prompt to below page:

Add Informix Server Information

Informix Server ID

5

* Informix Server Name

rataktp4_vm

* Informix Hostname

tramo-vm1

◉ Informix Port Number   ◯ Service Name

1538

Monitoring Credentials ✏

The monitoring credentials are used to query information from the database server, either by the monitoring agent or for display in the UI. See more...

Admin Credentials

Username

informix

Password

•••••••••••

Connection Properties

+ Add Connection Property

Submit

Informix Server Name: Informix DB Server name (**rataktp4_vm**)

Informix Hostname: Hostname of Server (**tramo-vm1**)

Informix Port Number: Take port number from SQL hosts file (**1538**)

Username: ********

Password: ********

After Adding all details, click on "**Test Connection**" & **Save**, The Server has been added.

Status

Server:	Online	Database spaces:	0 spaces < 5% free	
Agent:	Offline	Last backup:	⚠ NEVER	
Server type:	Standard	Spaces not backed up:	⚠ 1	
Online log:	❌ 1 errors, ⚠ 2 warnings	Auto Update Statistics:	✔ Enabled	

Incidents

No incidents have occurred on this server yet.

Storage Performance

Last Checkpoint	Reads from Cache	Writes from Cache
0.002 seconds 13 minutes ago	98.34%	94.02%

Availability

⚠ Server is not part of a high availability cluster.

Step3: Click on "Add Group" for Creating the Informix Group & Map those servers into groups.

The server has been successfully added into the group.

Group: Production & Test.

3. **Informix HQ Agent Setup**

3.1. Start Agent from UI

1. Define the Informix database server that the agent will be monitoring in `InformixHQ` server.
2. Navigate to the Informix database server's **Setup > Agent** page, configure agent deployment and click the **Deploy agent** button.
   - Define a repository database where to store the gather data.
   - Define the directory to deploy the agent files to and remote user which will own and run the agent.

Root Group Production rataktp4_vm Setup
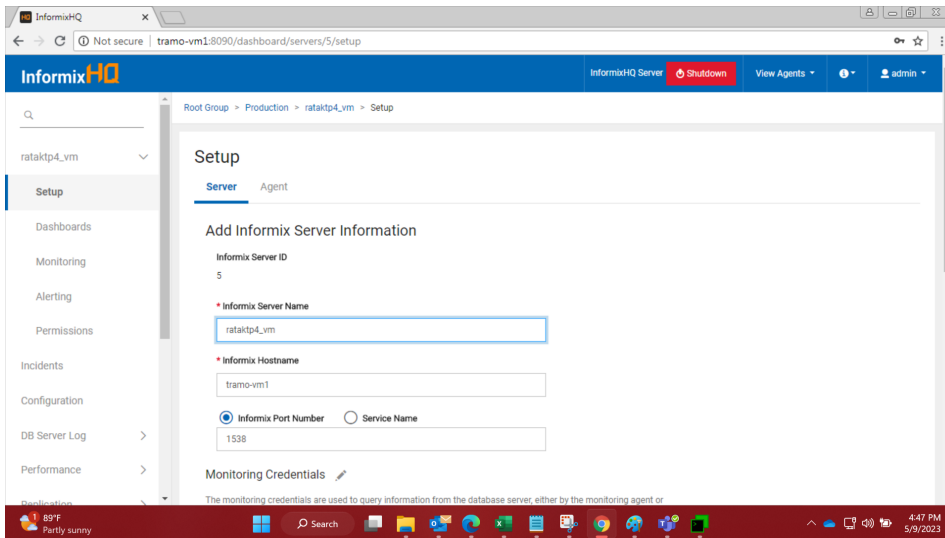
Informix Server ID: Default generated by Informix HQ

3.2. Start Agent from command line.

1. Define the Informix database server that the agent will be monitoring in `InformixHQ` server.
2. Navigate to the Informix database server's **Setup > Agent** page, define a repository database and click the **Save** button.
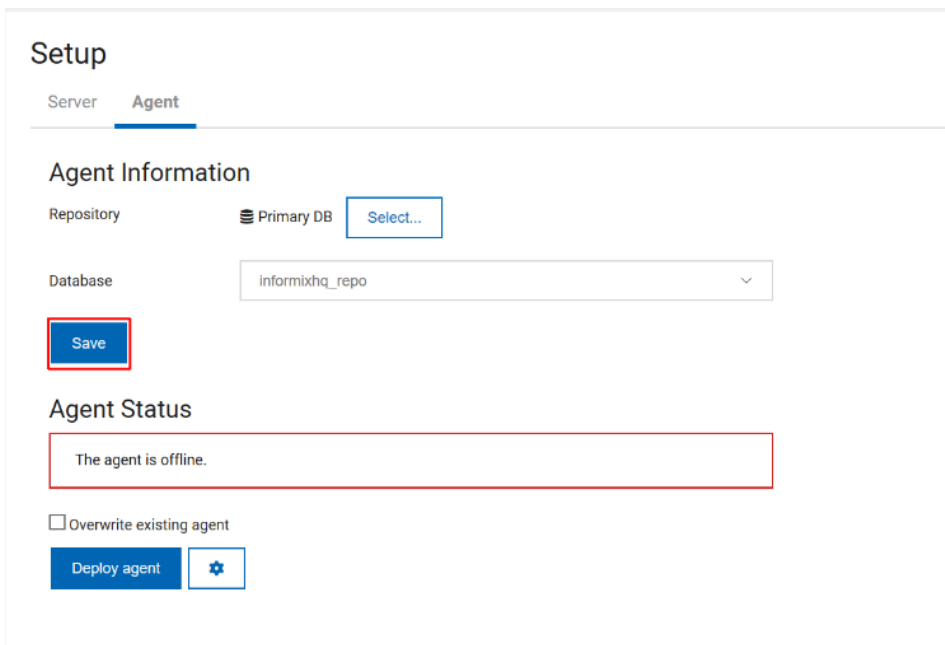
```
informix@adetrmdb1:/opt/informix/IDS/14.10/hq> ll
total 121858
-rw-r--r--   1 informix informix     9663 Mar 15 19:46 1
-rw-r--r--   1 informix informix       62 Apr 27 14:24 agent_rataktp1.properties
-rw-r--r--   1 informix informix       62 Apr 28 09:35 agent_rataktp2.properties
-rw-r--r--   1 informix informix       62 Apr 28 09:29 agent_rataktp4.properties
-rw-r--r--   1 informix informix       62 Apr 28 09:42 agent_ratcalp2.properties
-rw-r--r--   1 informix informix       62 Apr 27 14:01 agent_test.properties
-rw-r--r--   1 informix informix     2120 Apr 27 10:41 agent.log4j.xml
-rw-r--r--   1 informix informix       62 Apr 27 10:41 agent.properties
-rw-------   1 informix informix 17166336 May  9 12:33 h2db.mv.db
-rw-------   1 informix informix        0 Mar 11 01:50 h2db.trace.db
-rw-r--r--   1 informix informix  4391687 Apr 27 10:41 informixhq-agent.jar
-rw-------   1 informix informix 11117553 May  9 12:55 informixhq-agent.log
-rw-r--r--   1 informix informix     5523 Mar 16 14:30 informixhq-agent.properties
-rw-r--r--   1 informix informix     9654 Apr  6  2022 informixhq-server-example.properties
-rw-r--r--   1 informix informix 26291879 Apr  6  2022 informixhq-server.jar
-rw-------   1 informix informix  1091394 May  9 12:27 informixhq-server.log
-rw-r--r--   1 informix informix     9625 Apr 27 13:48 informixhq-server.properties
-rwxr-xr-x   1 informix informix    18856 Apr  6  2022 InformixHQ.bat*
-rwxr-xr-x   1 informix informix    15549 Apr  6  2022 InformixHQ.ksh*
-rwxr-xr-x   1 informix informix    15594 Mar 16 17:45 InformixHQ.sh*
-rw-r--r--   1 informix informix     2031 Apr  6  2022 server.log4j.xml
informix@adetrmdb1:/opt/informix/IDS/14.10/hq> more agent_rataktp4.properties
informixServer.id=5
server.host=10.133.20.66
server.port=8090
informix@adetrmdb1:/opt/informix/IDS/14.10/hq>
```

Step1: As informix user, make a copy of the example configuration **file.**

Edit the configuration file and set the parameters shown below:

```
#The ID of the Informix Server defined in InformixHQ
informixServer.id=5

#host and port of the InformixHQ server
server.host=10.133.20.66
server.port=8090
```

Step2: After that need to run "**InformixHQ.sh**" to start the Agent as below:

./InformixHQ.sh startagent propfile=agent_rataktp1.properties


```
informix@adetrmdb1:/opt/informix/IDS/14.10/hq> ll
total 159118
-rw-r--r--   1 informix informix     9663 Mar 15 19:46 1
-rw-r--r--   1 informix informix       62 Apr 27 14:24 agent_rataktp1.properties
-rw-r--r--   1 informix informix       62 Apr 28 09:35 agent_rataktp2.properties
-rw-r--r--   1 informix informix       62 Apr 28 09:29 agent_rataktp4.properties
-rw-r--r--   1 informix informix       62 Apr 28 09:42 agent_ratcalp2.properties
-rw-r--r--   1 informix informix       62 Apr 27 14:01 agent_test.properties
-rw-r--r--   1 informix informix     2120 Apr 27 10:41 agent.log4j.xml
-rw-r--r--   1 informix informix       62 Apr 27 10:41 agent.properties
-rw-------   1 informix informix 18612224 May 16 09:31 h2db.mv.db
-rw-------   1 informix informix        0 Mar 11 01:50 h2db.trace.db
-rw-r--r--   1 informix informix  4391687 Apr 27 10:41 informixhq-agent.jar
-rw-------   1 informix informix 17353739 May 16 10:08 informixhq-agent.log
-rw-r--r--   1 informix informix     5523 Mar 16 14:30 informixhq-agent.properties
-rw-r--r--   1 informix informix     9654 Apr  6  2022 informixhq-server-example.properties
-rw-r--r--   1 informix informix 26291879 Apr  6  2022 informixhq-server.jar
-rw-------   1 informix informix  1945399 May 16 09:34 informixhq-server.log
-rw-r--r--   1 informix informix     9625 Apr 27 13:48 informixhq-server.properties
-rwxr-xr-x   1 informix informix    18856 Apr  6  2022 InformixHQ.bat*
-rwxr-xr-x   1 informix informix    15549 Apr  6  2022 InformixHQ.ksh*
-rwxr-xr-x   1 informix informix    15594 Mar 16 17:45 InformixHQ.sh*
-rw-r--r--   1 informix informix     2031 Apr  6  2022 server.log4j.xml
informix@adetrmdb1:/opt/informix/IDS/14.10/hq>  ./InformixHQ.sh startagent propfile=agent_rataktp1.properties
```

Step3: Select the Database and Click on "**SAVE**" button to get the Agent Online.
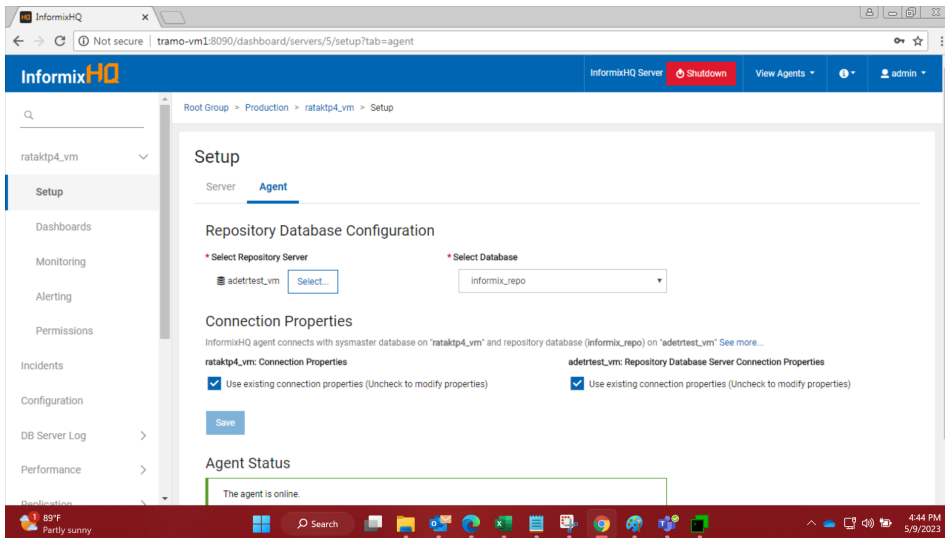
Step4: Here we can find Both **Informix Server & Agent** are ONLINE.
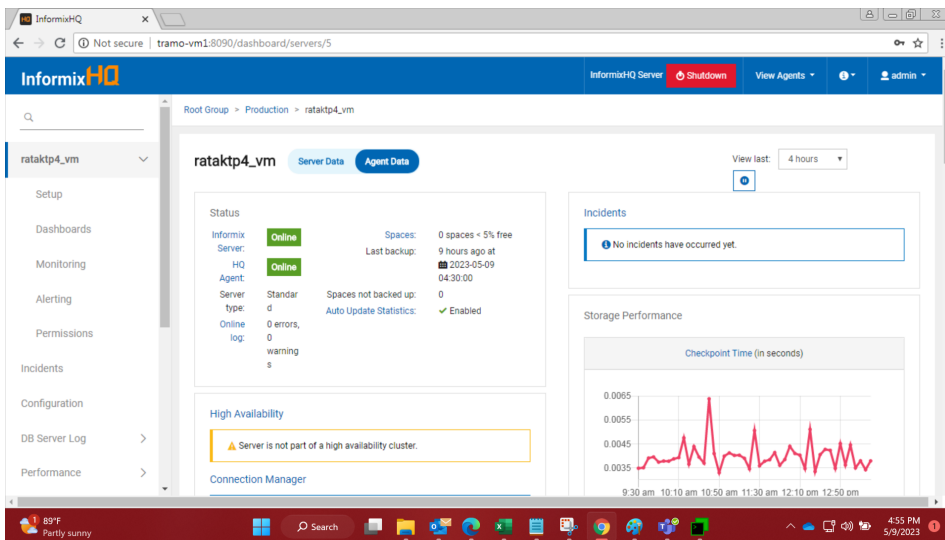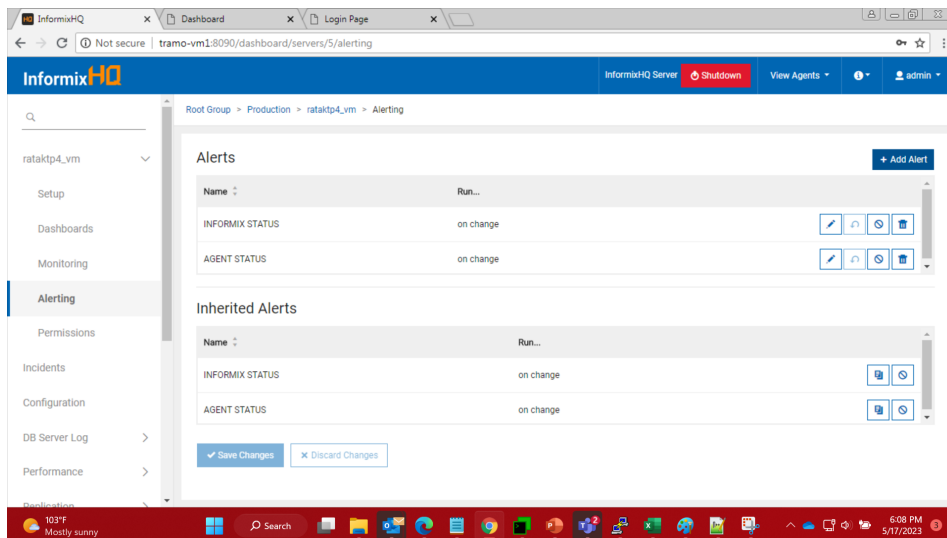

4. **Alerting in InformixHQ:**

Alerts in InformixHQ can be fully customized. You can configure not only what you want to be alerted on, but also the threshold or condition that should trigger that alert.

Alerts defined for a group are automatically inherited by the child groups and child servers of that group. Defining alerts at the group level simplifies the process of managing alerts for multiple servers.

To create alerts:

1. Click on a server or a group from the dashboard and then select the **Alerting** link on the left-hand sidebar menu. The **Alerting** page lists the alerts configured in the server or group's alerting profile.
2. Click the **Add Alert** to open a form that guides you through the process of defining an alert. Provide an alert name to identify it.
3. Select what you want to alert on: Informix server status, agent status, or data from a sensor metric.
4. Define the alerting condition. For example, alert me when the Informix server status is offline or alert me when the number of sessions connected to Informix is greater than 200.

Root Group Production rataktp4_vm Alerting.

Name: Name of the alert which we want to set.

**Alert me when:** We can select any of the option from the given list.
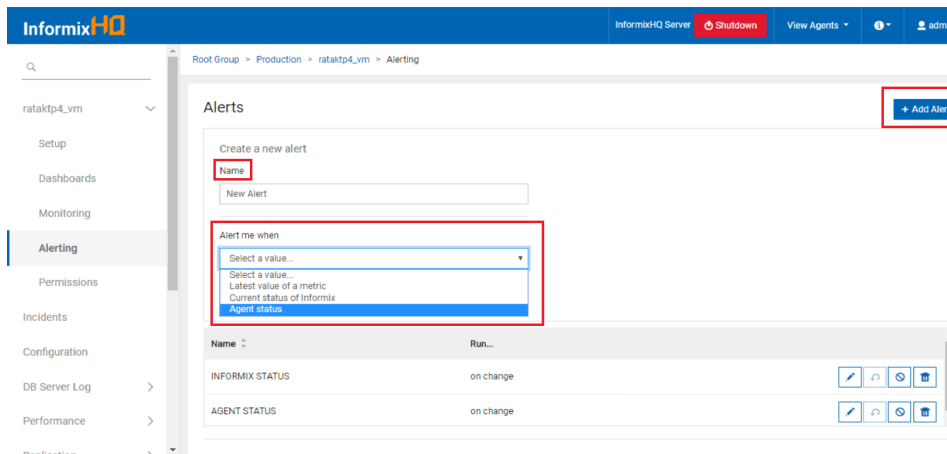
To enable alerting notifications, a system administrative user for InformixHQ must enable the desired alerting notification service on the System Settings->Alerting Configuration page.

For certain alerting notification services, including email and Twilio, each individual user who wants to receive alerting notifications must enable it for their user on the My Settings->Alerting Configuration page where they will provide user specific settings like their email address or phone number.
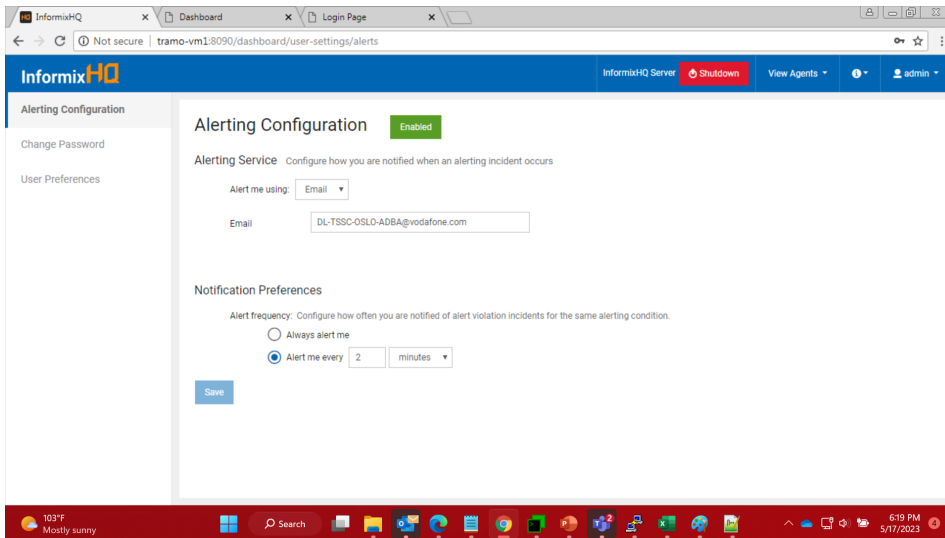
Like this we will get the Alerting Incidents in InformixHQ:
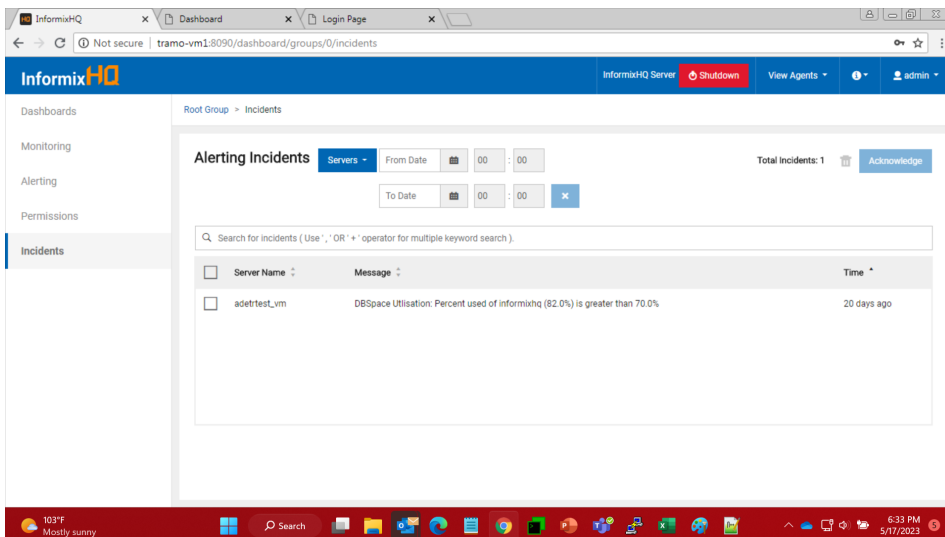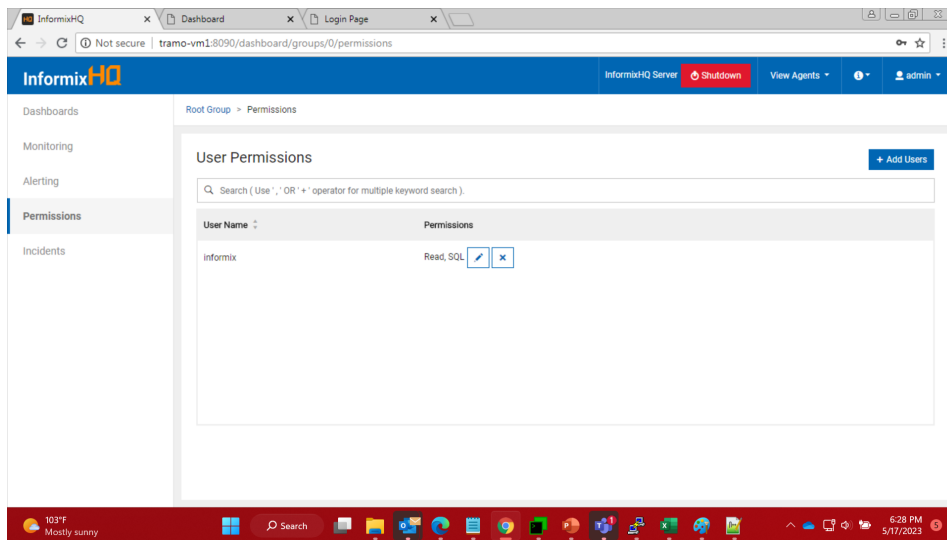

5. **Users & Permissions:**

Only users with System Administrator privileges can add or delete users or modify their privileges. The initial **admin** user that is created when the InformixHQ server starts for the first time has System Administrator privileges. Additional users with System Administrator privileges can be created.

To add a user, delete a user, or modify their InformixHQ system privileges and permissions, a System Administrator user should click on their user icon in the top right corner of the title bar and go to the **System Settings > User Management** page.

When adding a user, you can optionally make the new user a System Administrator if you want them to manage users and configure InformixHQ. System Administrators automatically have full access (**Read**, **SQL**, and **Admin** permissions) on all servers and groups. When creating a new non-System Administrator, you have the option to grant **Read, SQL,** and/or **Admin** permissions for that user to any servers and groups that have been added to InformixHQ.

Read permissions allow a user to view information about a server in the UI, **Admin** permissions allow a user to execute administrative actions to make changes to a server, and **SQL** permissions allow a user to run SQL queries against that database server on the **Schema Manager** page.

Note: These three permissions are mutually exclusive. Granting **Admin** permissions does not automatically include **Read** permission.

In order to run administrative actions on an Informix database server, a user must have **Admin** permissions on that server and admin credentials must have been provided when adding that server to InformixHQ. You can review and edit server credentials by going to the server's **Setup** page or by going to the group dashboard, selecting the server's card, and clicking **Edit**.

Permissions for a server or a group in InformixHQ are inherited. If a user is granted **Read** or **Admin** privilege on a group, the same privilege will be granted on all servers and sub-groups within that group.

While the **System Settings > User Management** page allows you to view and edit the complete permissions for each individual user of InformixHQ, there is also a **Permissions** page specific to each server or group that allows to you to see (and edit) all users who have permissions to that particular server or group. You can access this page by navigating to a particular server or group and clicking on **Permissions** in the side-bar menu.