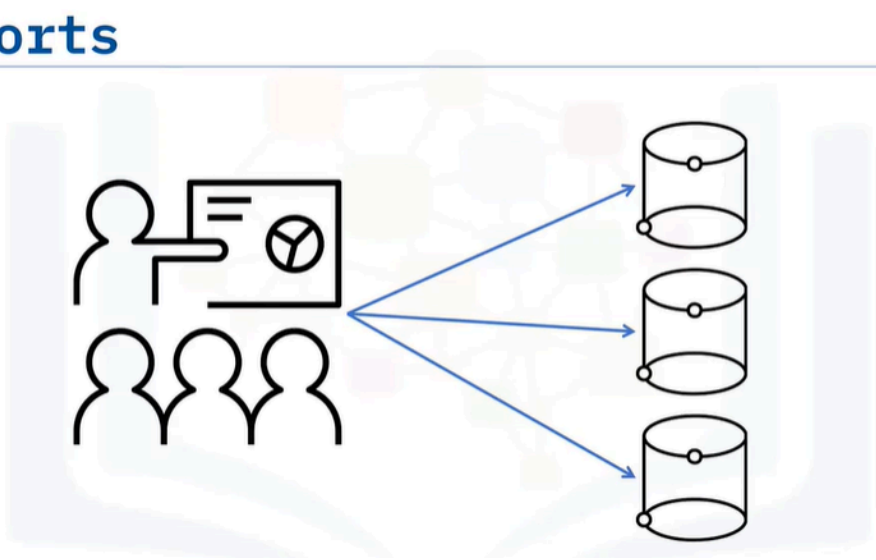
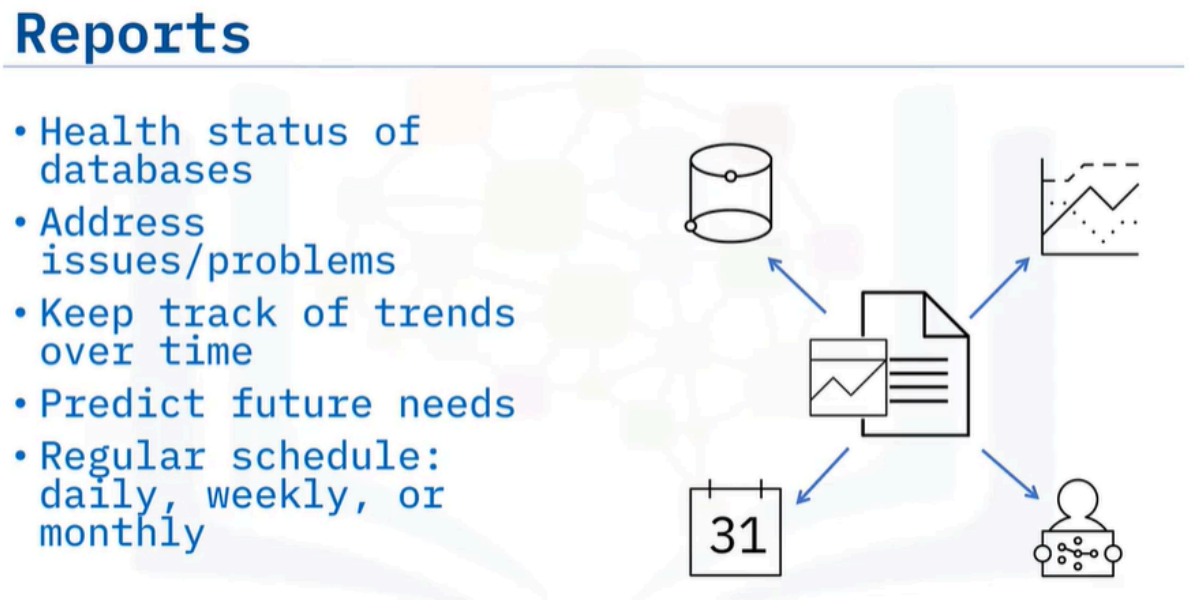
Automating Reports and Alerts

Sure! Let's talk about the difference between reports, notifications, and alerts in the context of database management.

Understanding Reports, Notifications, and Alerts:
Reports are like regular health check-ups for your databases. They provide a summary of how everything is running, such as how many users are connecting successfully or if there are any issues. Think of it as a weekly report card that shows how well your databases are doing. Notifications, on the other hand, are gentle reminders. They let you know about events that might need your attention but aren't urgent, like a user trying to log in and failing. It's like getting a notification on your phone that someone tried to reach you but didn't succeed. Lastly, alerts are the urgent messages that demand immediate action. They signal serious problems, like running out of storage space, similar to a fire alarm going off when there's a fire.

Example to Illustrate:
Imagine you're a gardener. Your reports are like a weekly garden journal where you note how many flowers bloomed and how much water the plants received. Notifications are like reminders to check on the plants that look a bit droopy, while alerts are like a loud siren that goes off if a storm is coming, warning you to protect your garden right away.

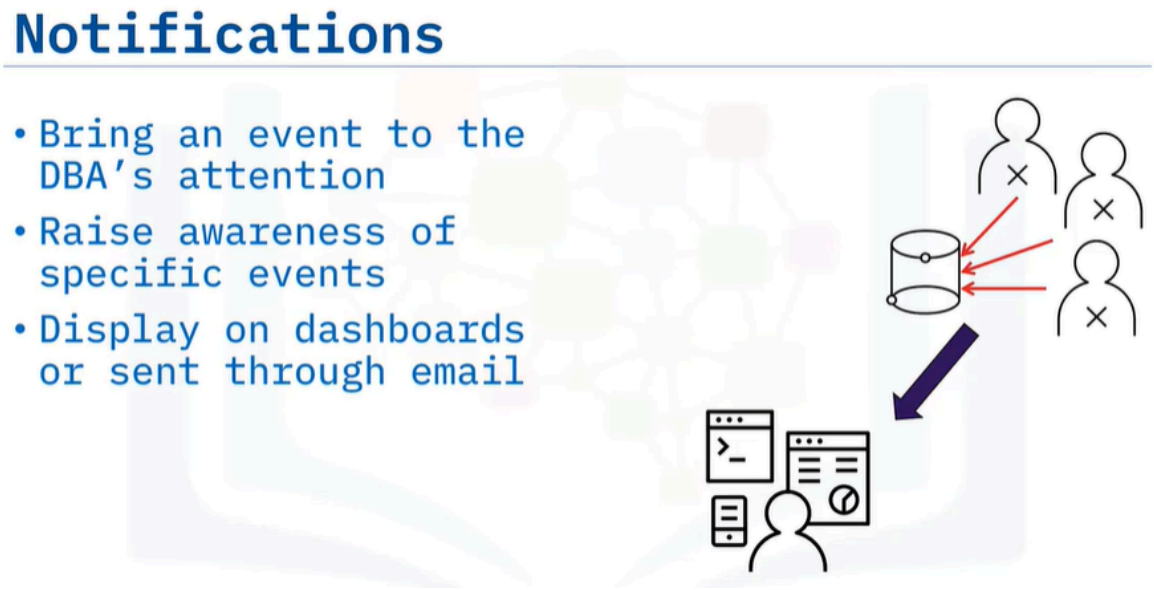




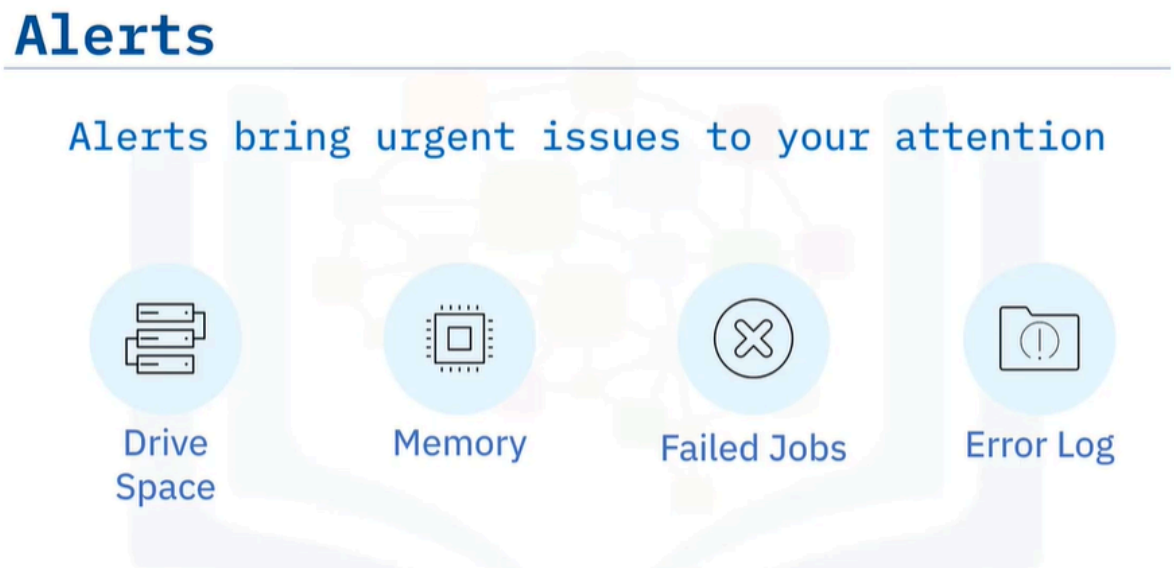
- Imagine you're a DBA working for a small company, and each week you need to give your bosses the status of the databases for which you are responsible. How will you get that information, and what should you include? RDBMSs include reporting functionality that gives you insights into the health of your databases, like the number of users connecting successfully or failing to connect, the amount of space used and the rate of increase, and the number of queries executed against the database. You can create and configure reports with specific metrics to give you the information you need. Running

reports on database health allows you to address issues before they become serious problems while allowing you to keep track of trends over time and help you to predict future needs and prepare for them. You can automate reports to run daily, weekly, or monthly, depending on your needs.

- In larger companies, an entire department may manage automated reports, while in smaller companies, a few DBAs, or in some cases only one DBA, might perform that task. Some companies use third-party reporting tools that provide extra options and features.



- Whereas reports give a regular overview of database health, notifications are used when an issue should be tracked but doesn't require your immediate attention. Notifications give you, the DBA, an opportunity to track specific database events. You might choose to be notified when a user attempts to log in but fails. A few events like this are part of daily life, as users forget or mistype their passwords, but a cluster of login failure notifications may indicate a malicious attempt to gain access to data. You can receive automated notifications through SMS messages, email, or via a dashboard. You need to configure your preferred option.

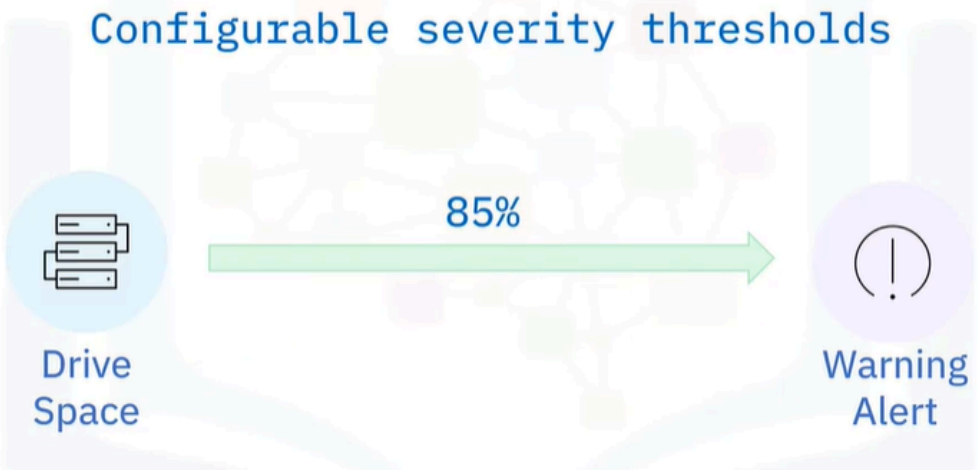


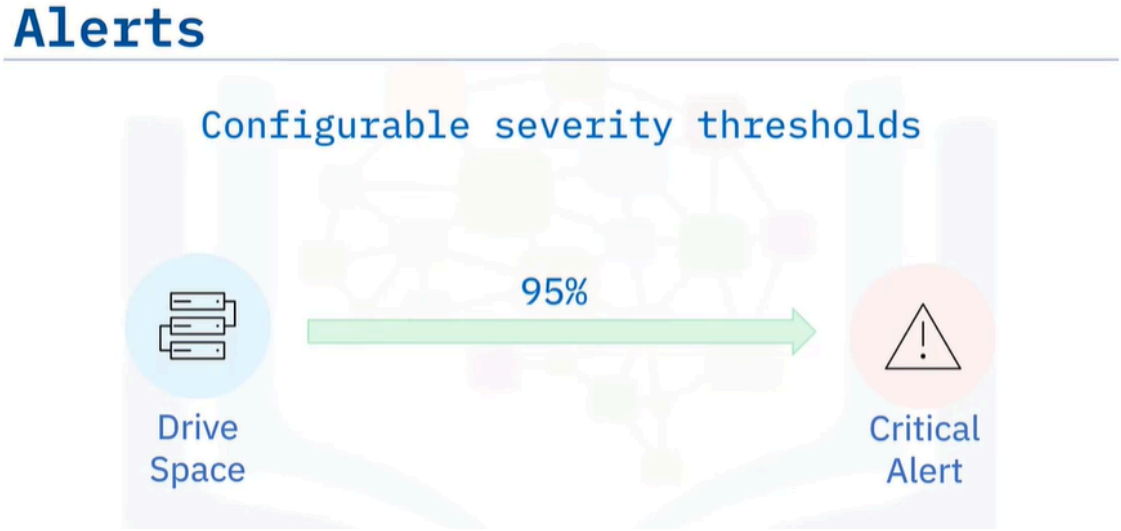
- Alerts quickly make you aware of issues that require your urgent attention. They are triggered by events like catastrophically low drive space or memory, scheduled jobs that have failed to complete, or error-level events in the error log. You need to determine which alerts are appropriate for your environment and configure them to immediately reach the DBA on duty. When configuring alerts and notifications, be careful not to set so many that you cannot respond to them all. You should evaluate which ones are vital and configure them accordingly.

Alerts

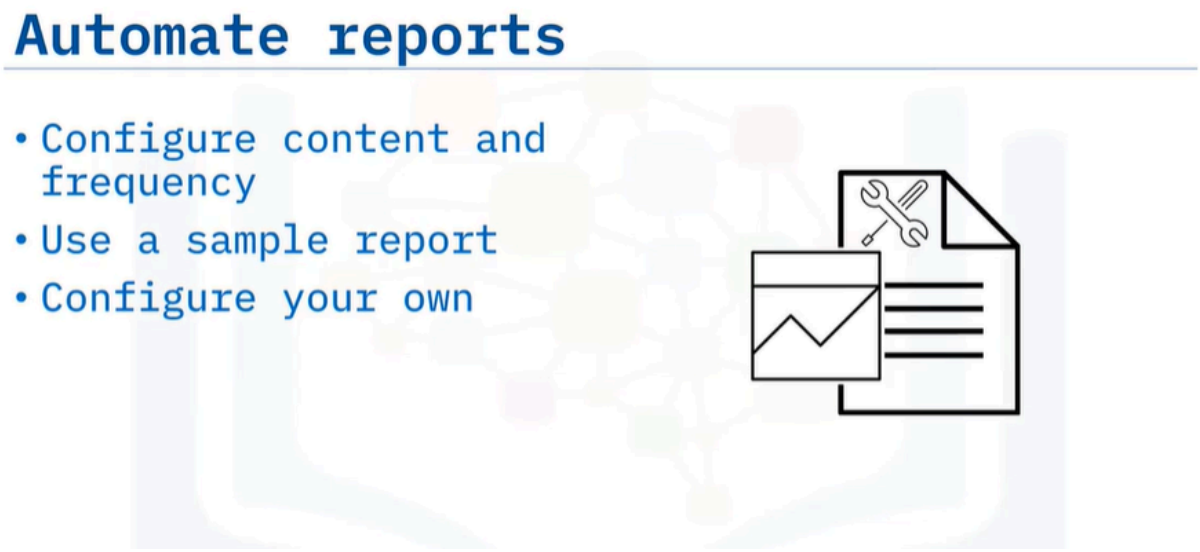
- Alerts use two or more thresholds to help communicate the severity of an event. A warning threshold, when the system sends a warning message, and a critical threshold, when the system sends a critical alert message.

Alerts





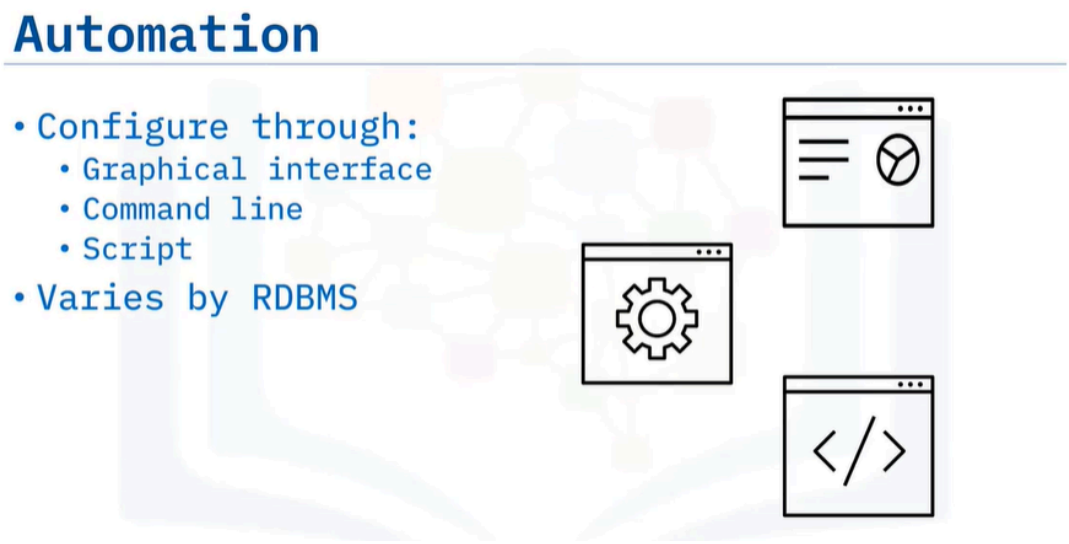
- A best practice is to send out warning alerts when the threshold for the specified event reaches 85% and a critical alert when the threshold reaches 95%.
- You can customize these values to suit your environment.



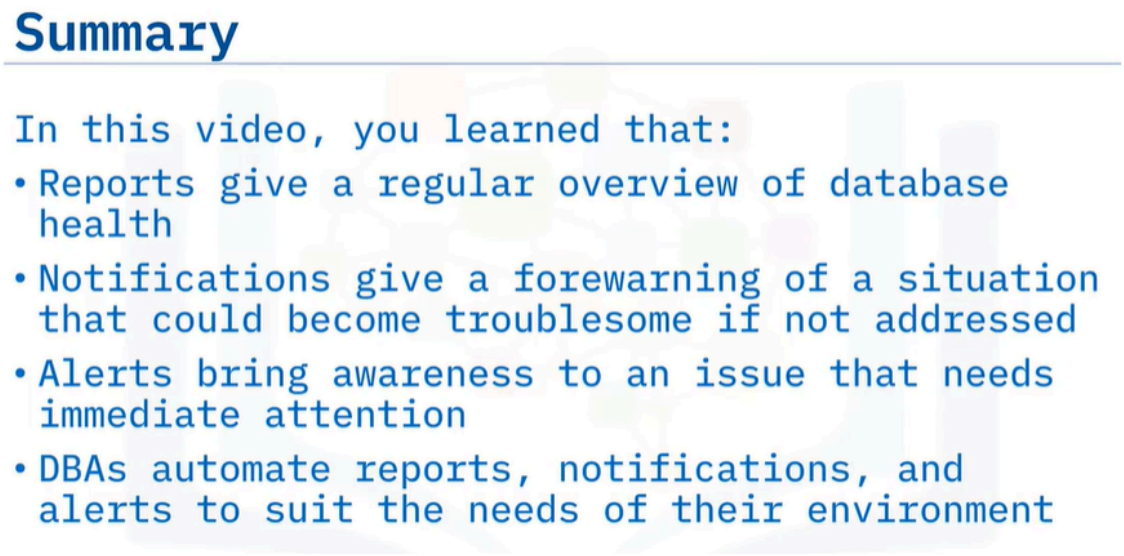
- Now that you know a little about reports, notifications, and alerts, let's see how to automate these features. Most RDBMSs enable you to configure the content

and frequency of reporting through a graphical interface.

- Many provide sample reports and enable you to configure your own if necessary.



- Notifications and alerts function similarly, and you can configure them through a graphical interface, a command-line tool, or a script. The process of automating reports, notifications, and alerts varies depending on which RDBMS you are using.



What is the difference between reports, notifications, and alerts?

Here's a concise breakdown of the differences between reports, notifications, and alerts in database management:

- **Reports:**
  - Provide a regular overview of database health.
  - Summarize key metrics, such as user connections and space usage.
  - Help track trends over time and predict future needs.
  - Can be automated to run daily, weekly, or monthly.
- **Notifications:**
  - Serve as reminders for events that need attention but are not urgent.
  - Inform the DBA about specific occurrences, like failed login attempts.
  - Allow tracking of potential issues before they escalate.
- **Alerts:**
  - Indicate urgent issues that require immediate attention.

- Triggered by critical events, such as low drive space or failed jobs.
- Use thresholds to communicate severity (e.g., warning vs. critical).

In summary, reports give a broad view, notifications provide gentle reminders, and alerts signal urgent problems.