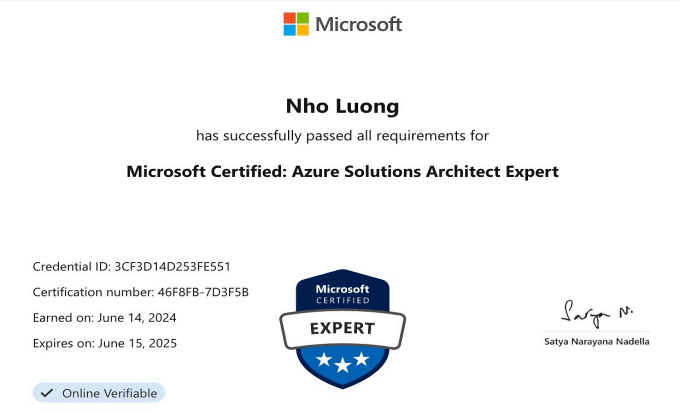
Splunk Overview

Author: Nho Luong

Skill: DevOps Engineer Lead



Microsoft

Nho Luong

has successfully passed all requirements for

Microsoft Certified: Azure Solutions Architect Expert

Credential ID: 3CF3D14D253FE551

Certification number: 46F8FB-7D3F5B

Earned on: June 14, 2024

Expires on: June 15, 2025

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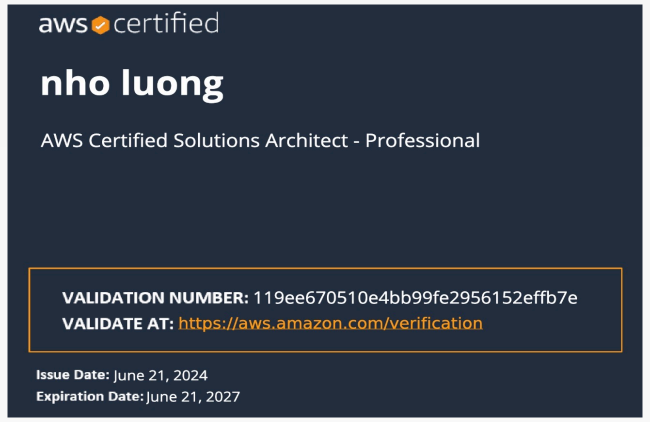
Microsoft CERTIFIED
EXPERT

Satya Narayana Nadella



aws certified

nho luong

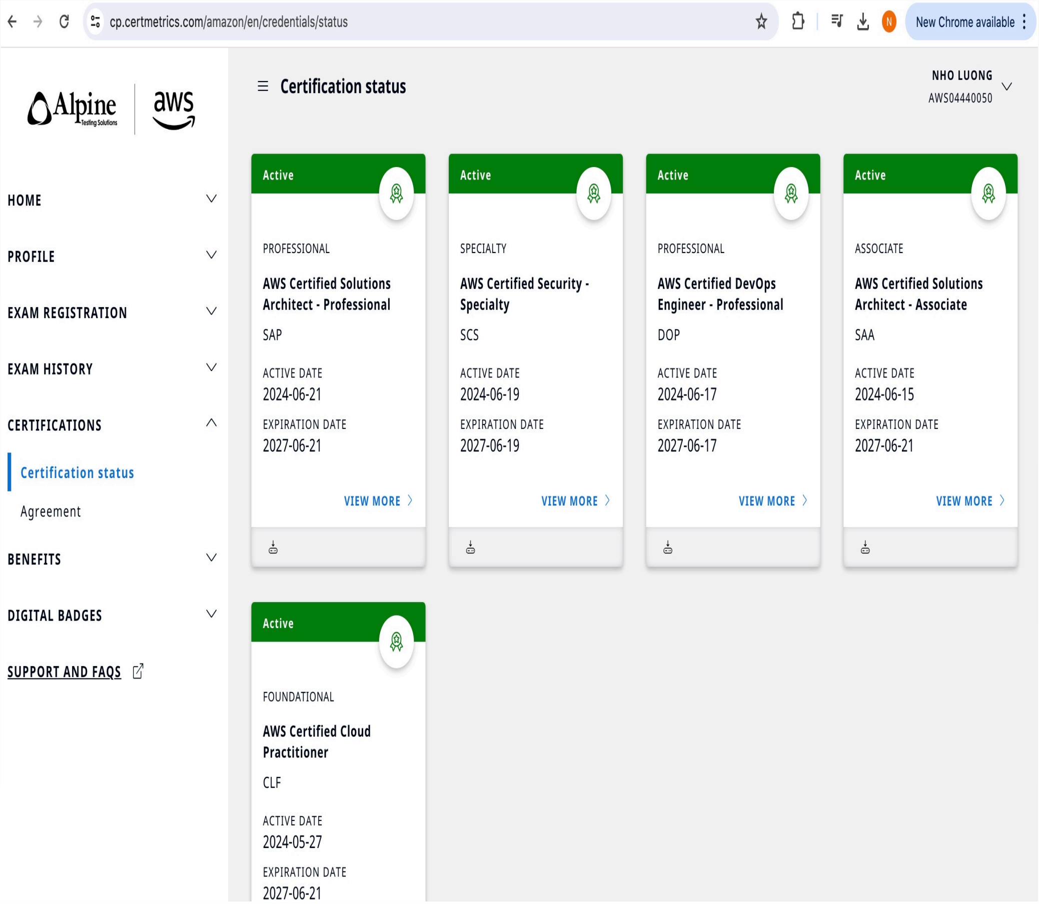
AWS Certified Solutions Architect - Professional

VALIDATION NUMBER: 119ee670510e4bb99fe2956152effb7e

VALIDATE AT: https://aws.amazon.com/verification

Issue Date: June 21, 2024

Expiration Date: June 21, 2027



cp.certmetrics.com/amazon/en/credentials/status

Certification status

NHO LUONG
AWS04440050

Active

PROFESSIONAL

AWS Certified Solutions Architect - Professional

SAP

ACTIVE DATE
2024-06-21

EXPIRATION DATE
2027-06-21

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SPECIALTY

AWS Certified Security - Specialty

SCS

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PROFESSIONAL

AWS Certified DevOps Engineer - Professional

DOP

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2024-06-17

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ASSOCIATE

AWS Certified Solutions Architect - Associate

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2024-06-15

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AWS Certified Cloud Practitioner

CLF

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2024-05-27

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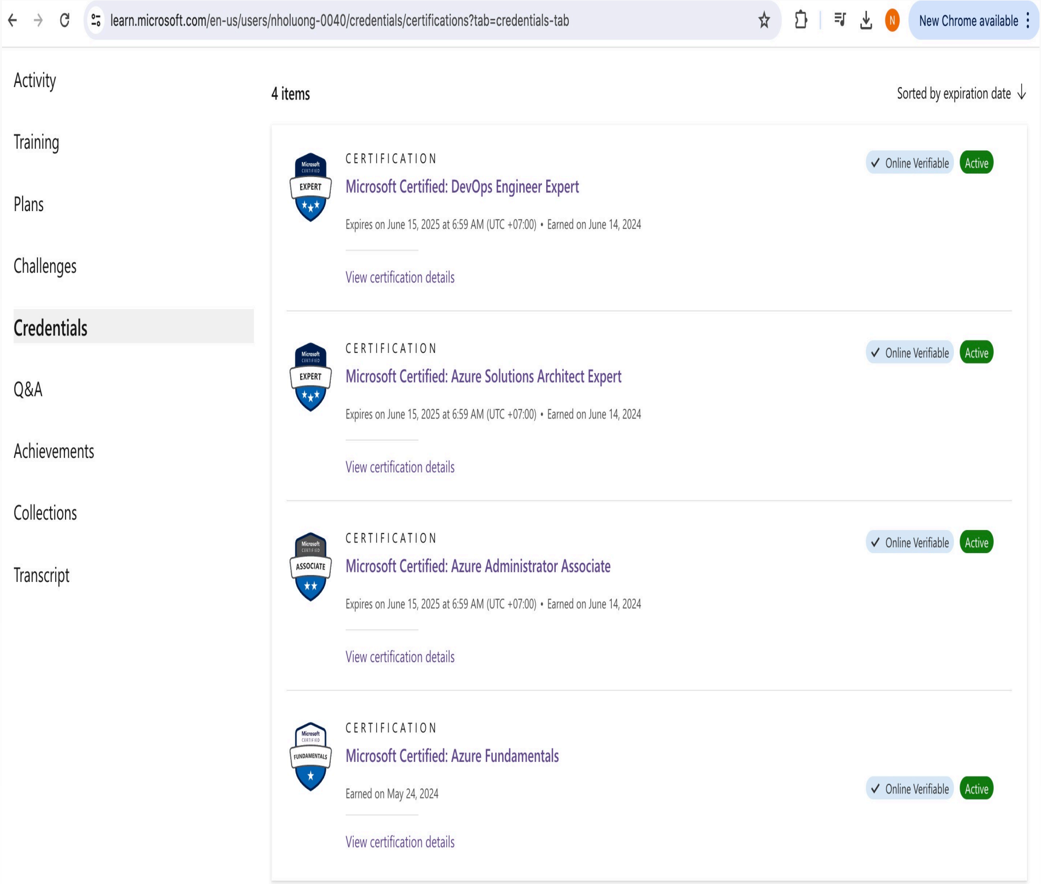

learn.microsoft.com/en-us/users/nholuong-0040/credentials/certifications?tab=credentials-tab

4 items

Sorted by expiration date ↓

CERTIFICATION

Microsoft Certified: DevOps Engineer Expert

Expires on June 15, 2025 at 6:59 AM (UTC +07:00) • Earned on June 14, 2024

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CERTIFICATION

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- Difference between Business Intelligence and Operational Intelligence

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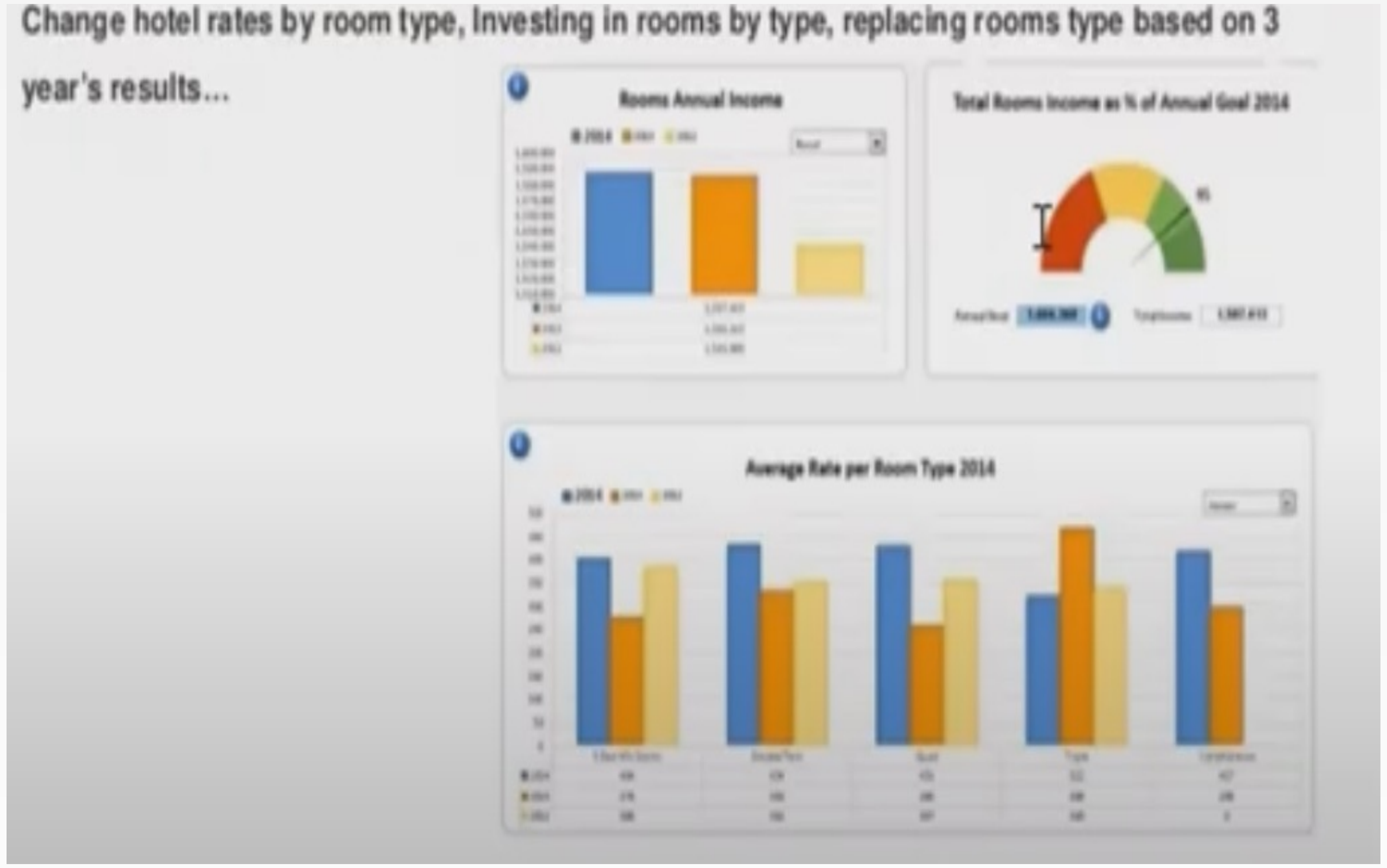
Skill: DevOps Engineer Lead

Business Intelligence



Change hotel rates by room type, Investing in rooms by type, replacing rooms type based on 3 year's results...

Rooms Annual Income
Total Rooms Income as % of Annual Goal 2014
Average Rate per Room Type 2014

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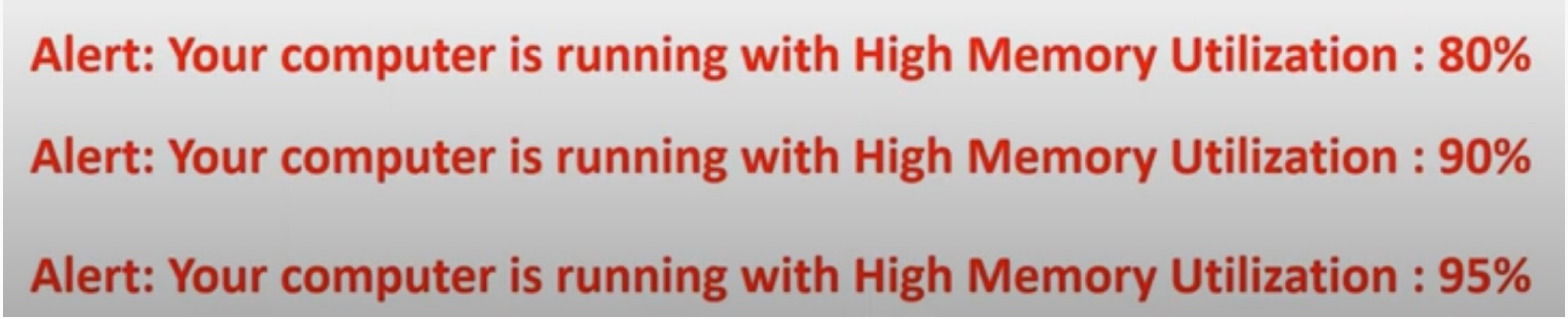
Operational Intelligence



Alert: Your computer is running with High Memory Utilization : 80%

Alert: Your computer is running with High Memory Utilization : 90%

Alert: Your computer is running with High Memory Utilization : 95%

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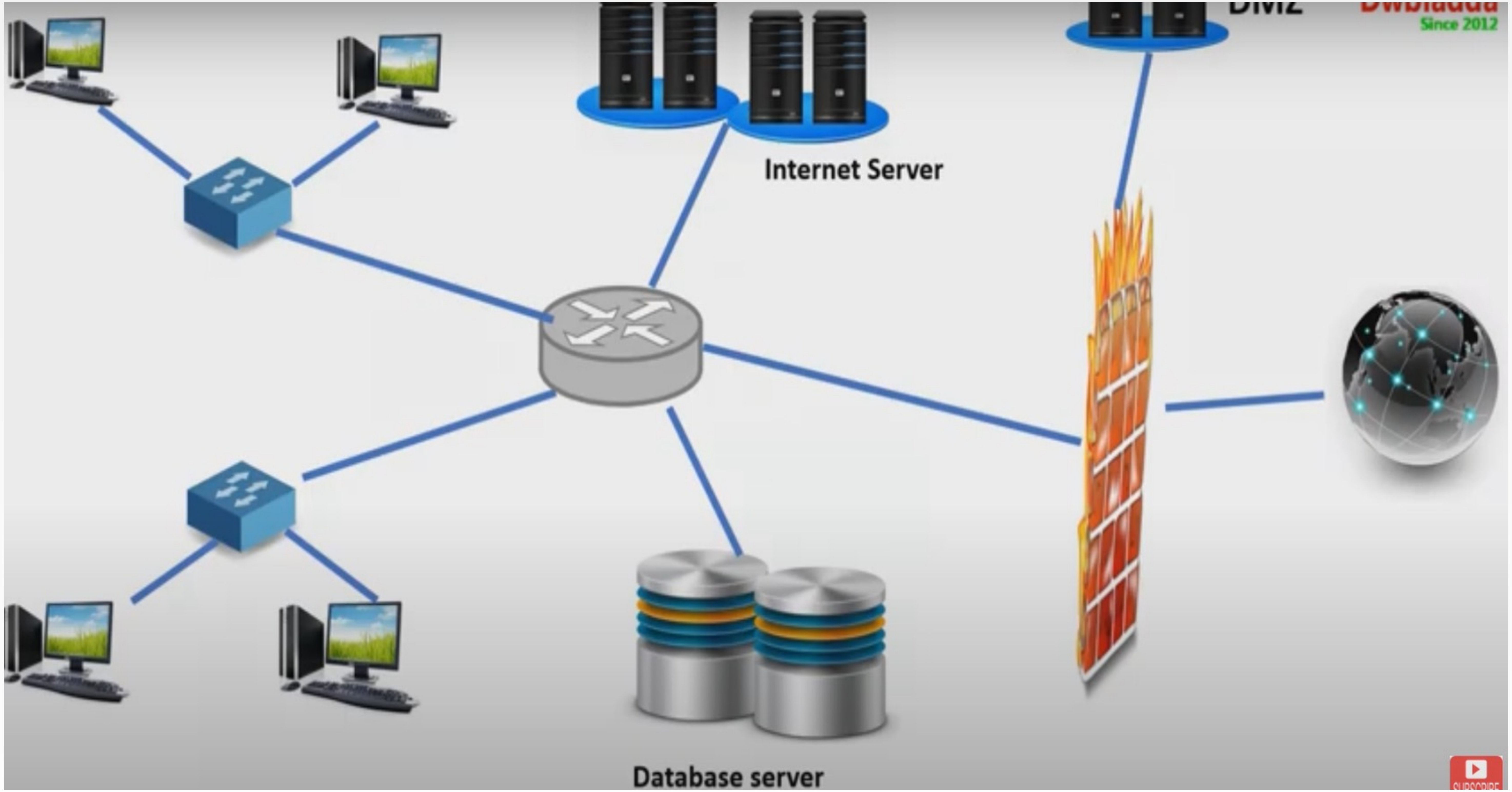

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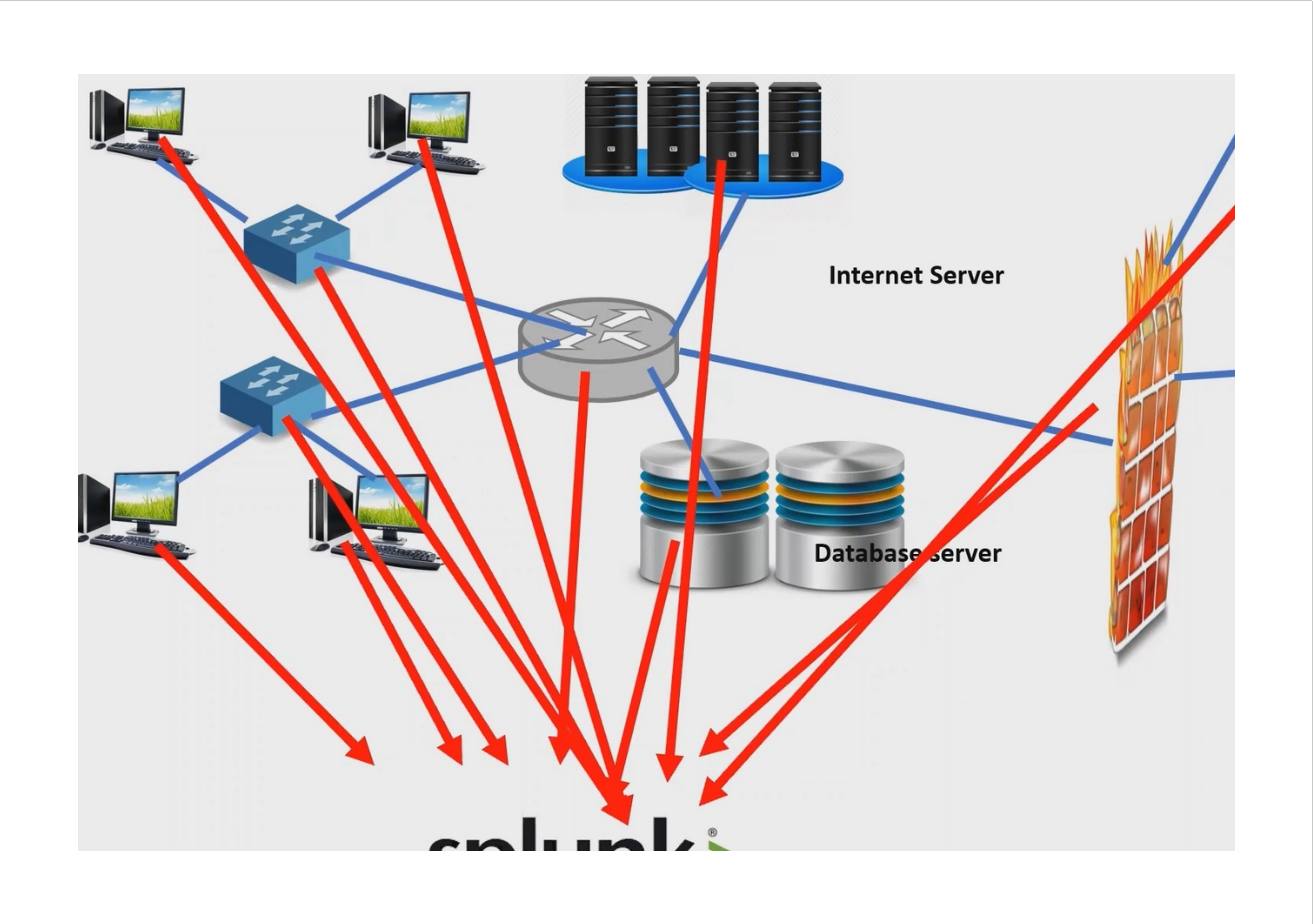
Splunk role



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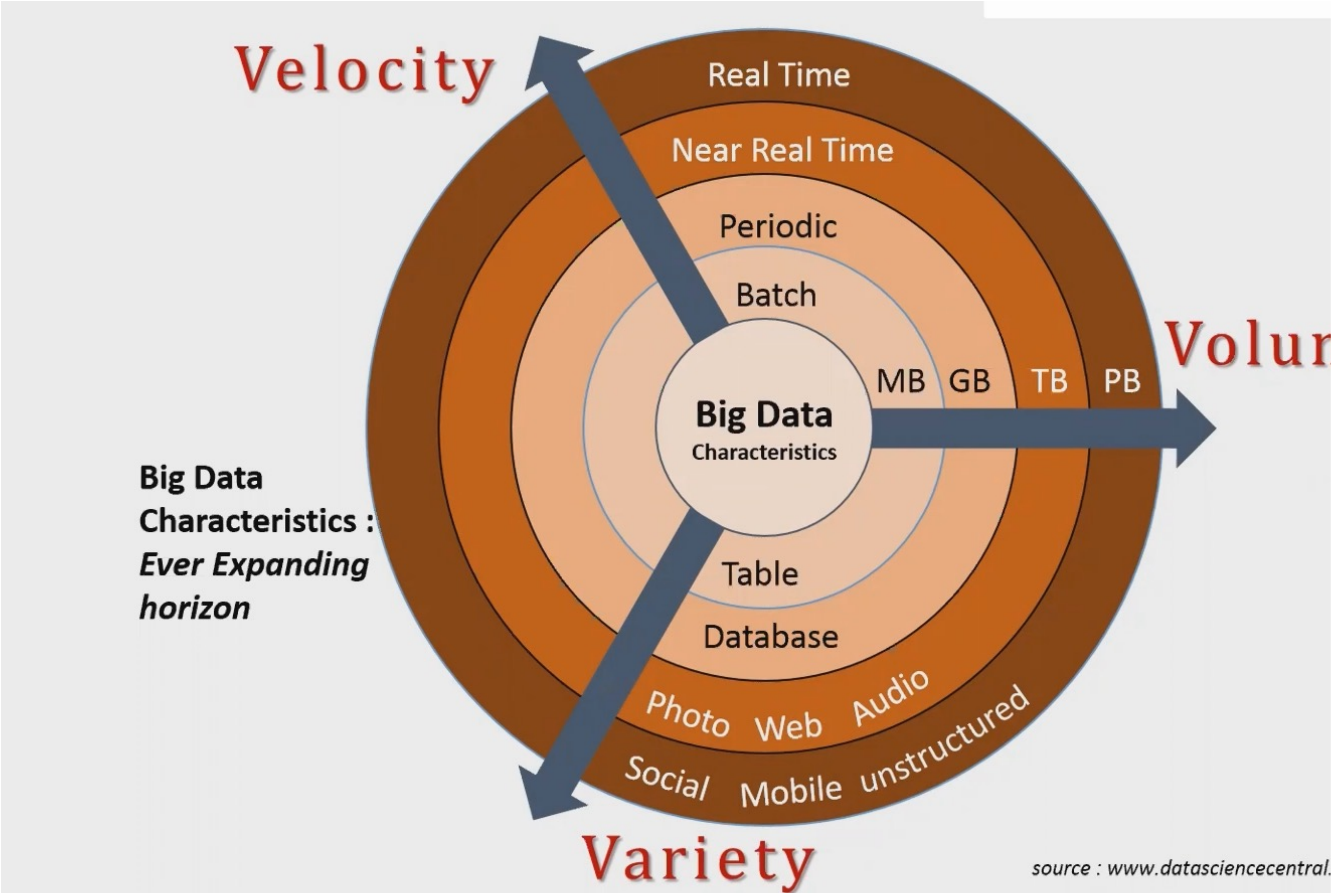
Big Data



Big Data Characteristics : ***Ever Expanding horizon***

source : www.datasciencecentral.

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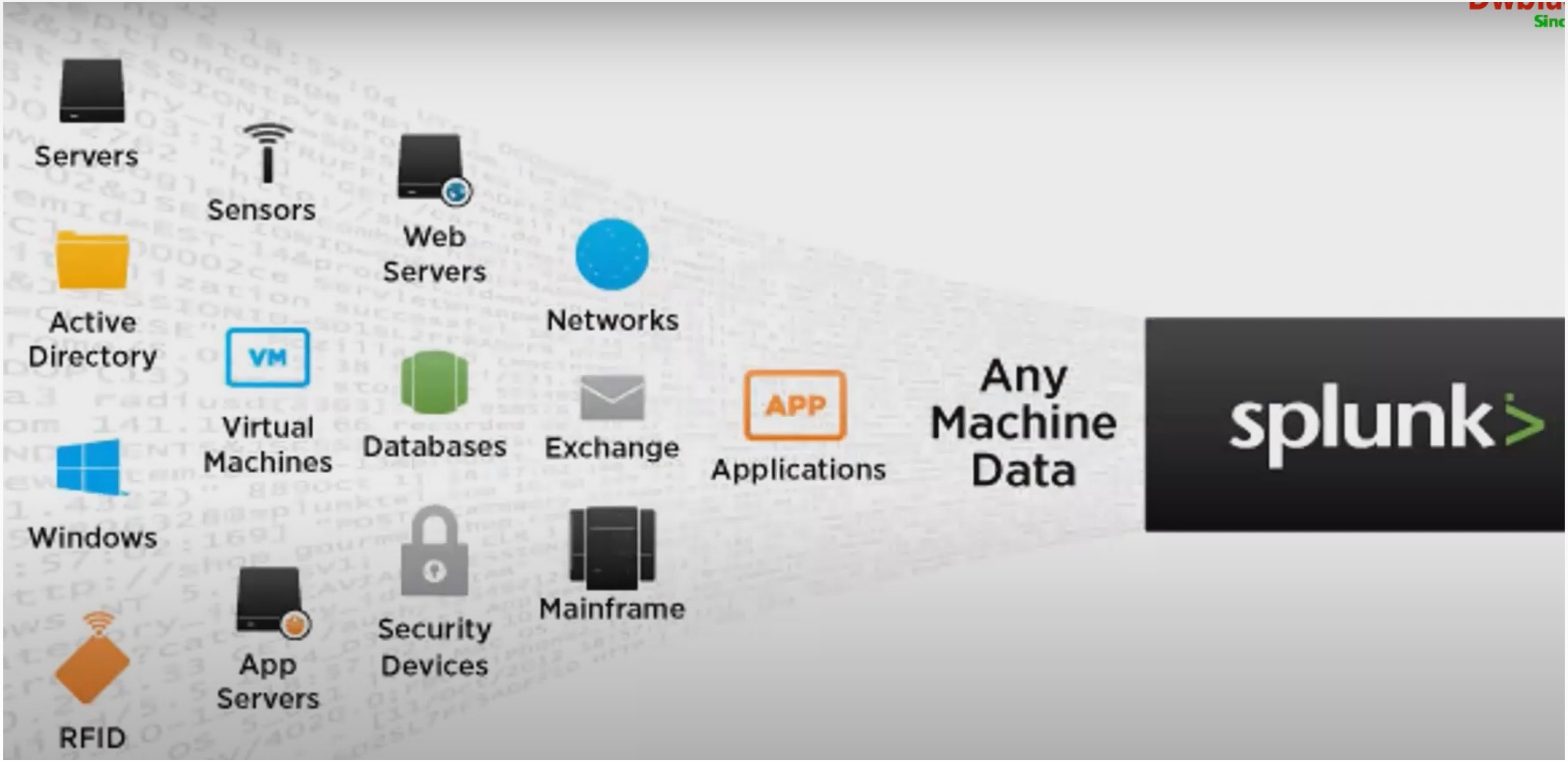

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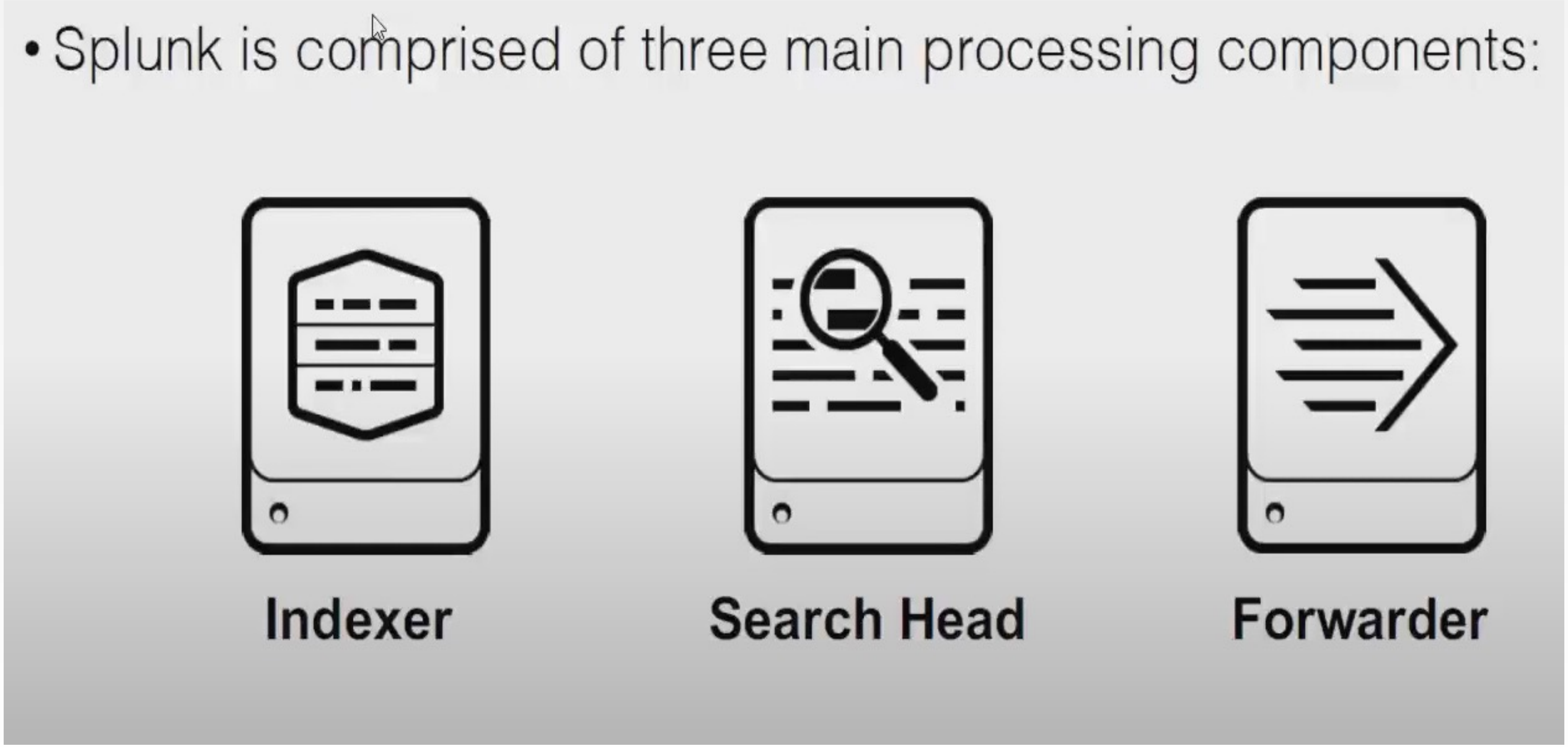
Splunk Component



- Splunk is comprised of three main processing components:

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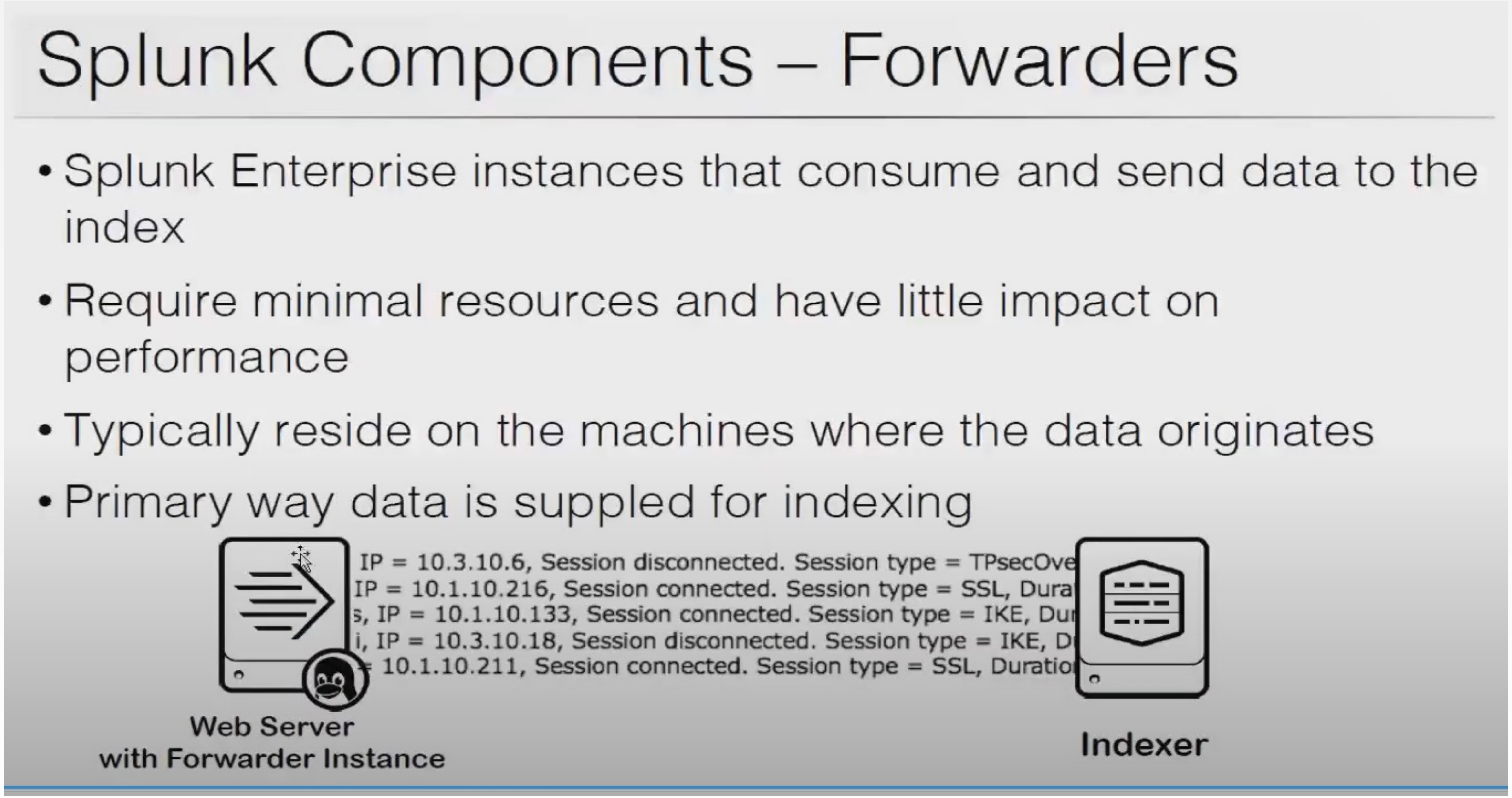

Splunk Components – Forwarders

- Splunk Enterprise instances that consume and send data to the index
- Require minimal resources and have little impact on performance
- Typically reside on the machines where the data originates
- Primary way data is suppled for indexing

```
 IP = 10.3.10.6, Session disconnected. Session type = TPsecOve
IP = 10.1.10.216, Session connected. Session type = SSL, Dura
s, IP = 10.1.10.133, Session connected. Session type = IKE, Du
i, IP = 10.3.10.18, Session disconnected. Session type = IKE, D
= 10.1.10.211, Session connected. Session type = SSL, Duratio
```

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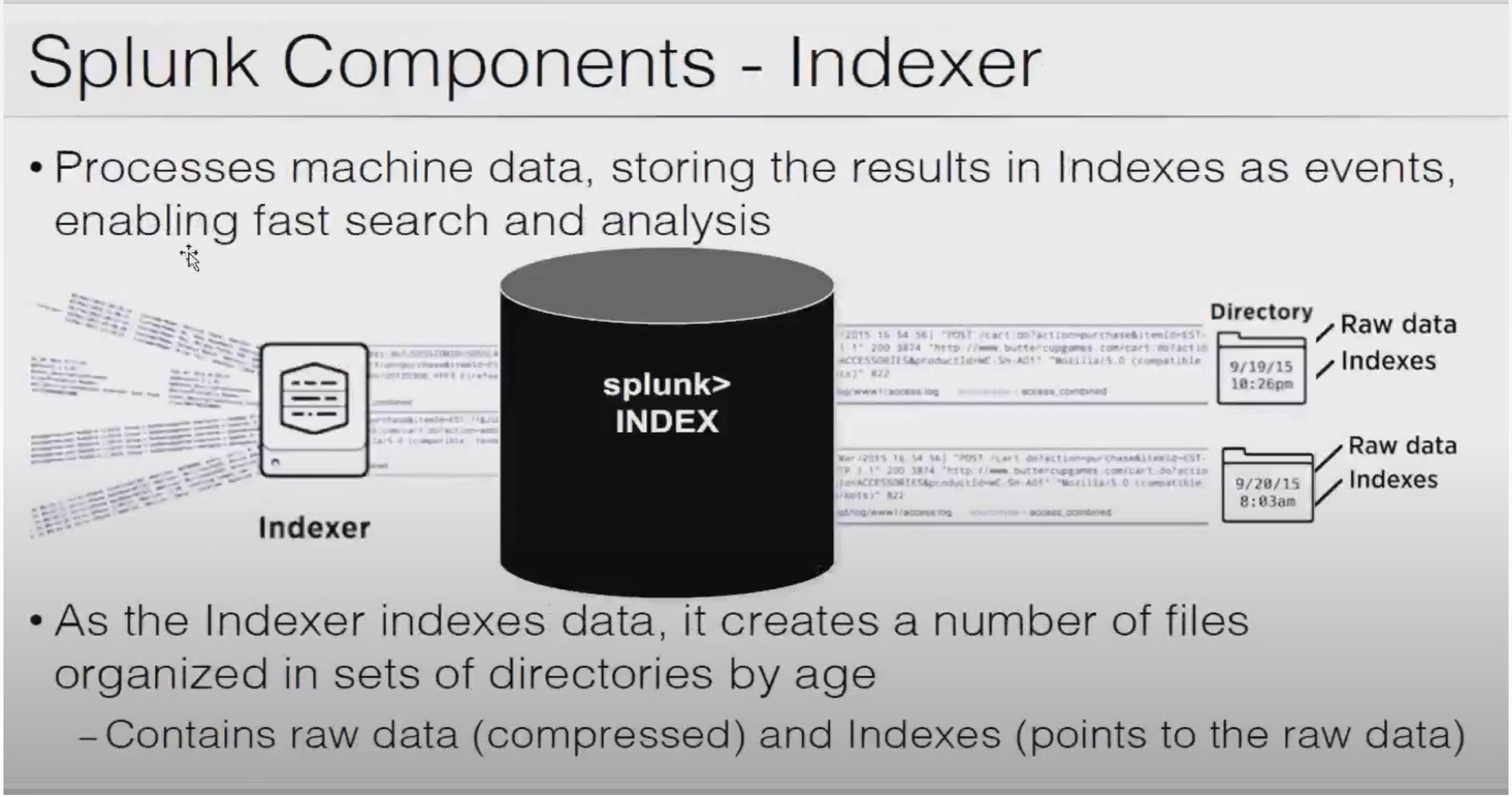

Splunk Components - Indexer

- Processes machine data, storing the results in Indexes as events, enabling fast search and analysis

- As the Indexer indexes data, it creates a number of files organized in sets of directories by age
  - Contains raw data (compressed) and Indexes (points to the raw data)

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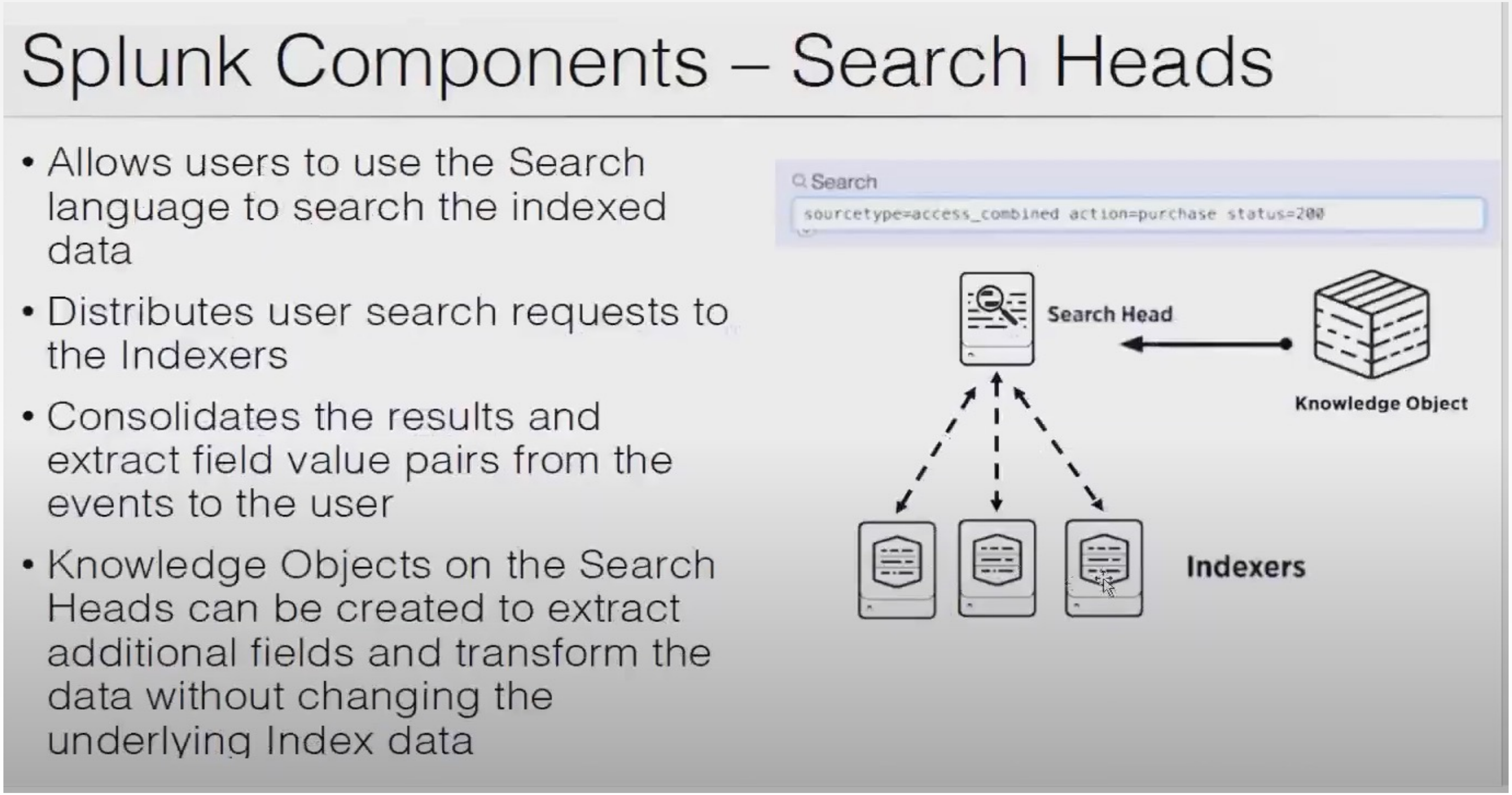

Splunk Components – Search Heads

- Allows users to use the Search language to search the indexed data
- Distributes user search requests to the Indexers
- Consolidates the results and extract field value pairs from the events to the user
- Knowledge Objects on the Search Heads can be created to extract additional fields and transform the data without changing the underlying Index data

Search

```
sourcetype=access_combined action=purchase status=200
```

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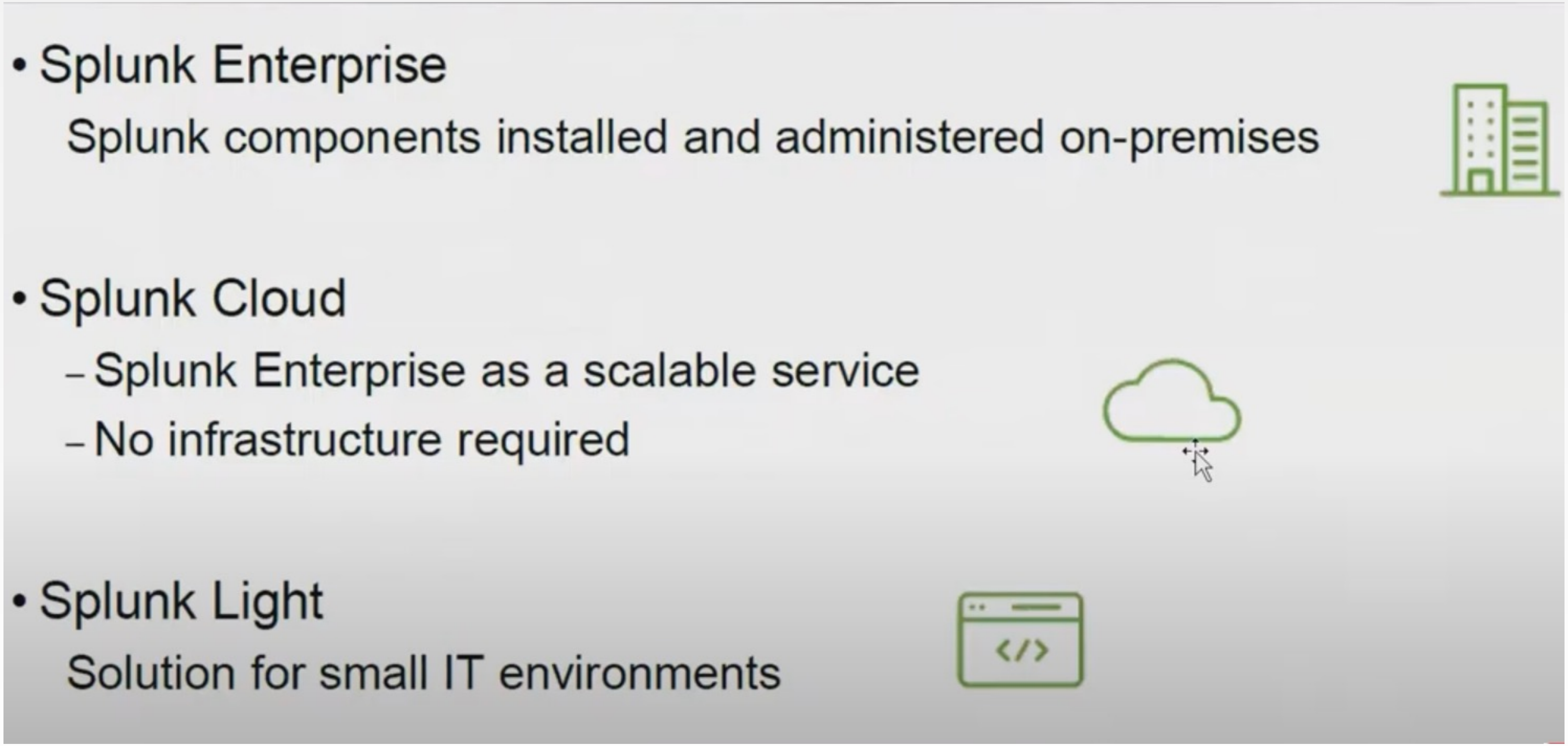

- Splunk Enterprise

  Splunk components installed and administered on-premises

- Splunk Cloud
  - Splunk Enterprise as a scalable service
  - No infrastructure required

- Splunk Light

  Solution for small IT environments

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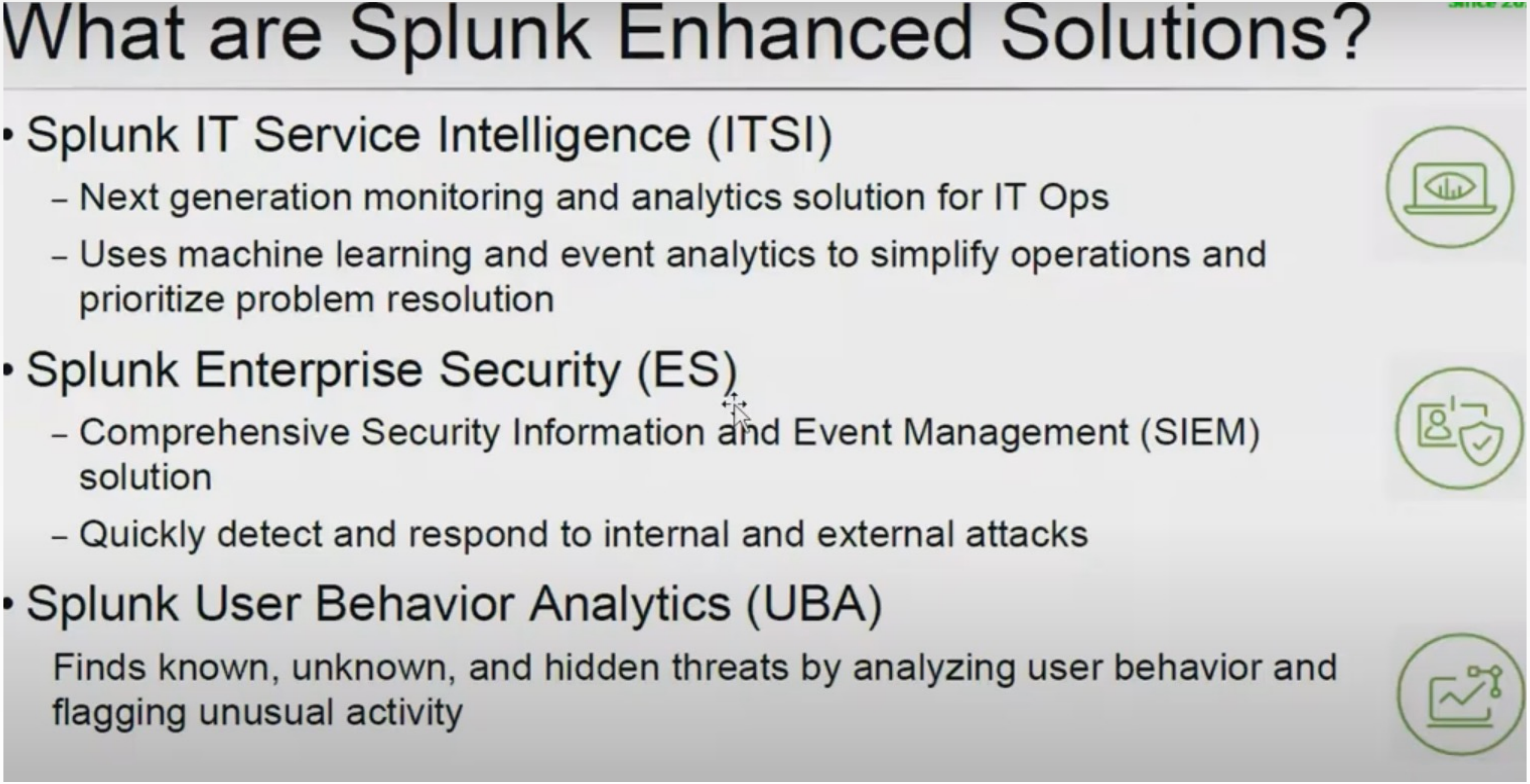

What are Splunk Enhanced Solutions?

- Splunk IT Service Intelligence (ITSI)
  - Next generation monitoring and analytics solution for IT Ops
  - Uses machine learning and event analytics to simplify operations and prioritize problem resolution
- Splunk Enterprise Security (ES)
  - Comprehensive Security Information and Event Management (SIEM) solution
  - Quickly detect and respond to internal and external attacks
- Splunk User Behavior Analytics (UBA)

  Finds known, unknown, and hidden threats by analyzing user behavior and flagging unusual activity

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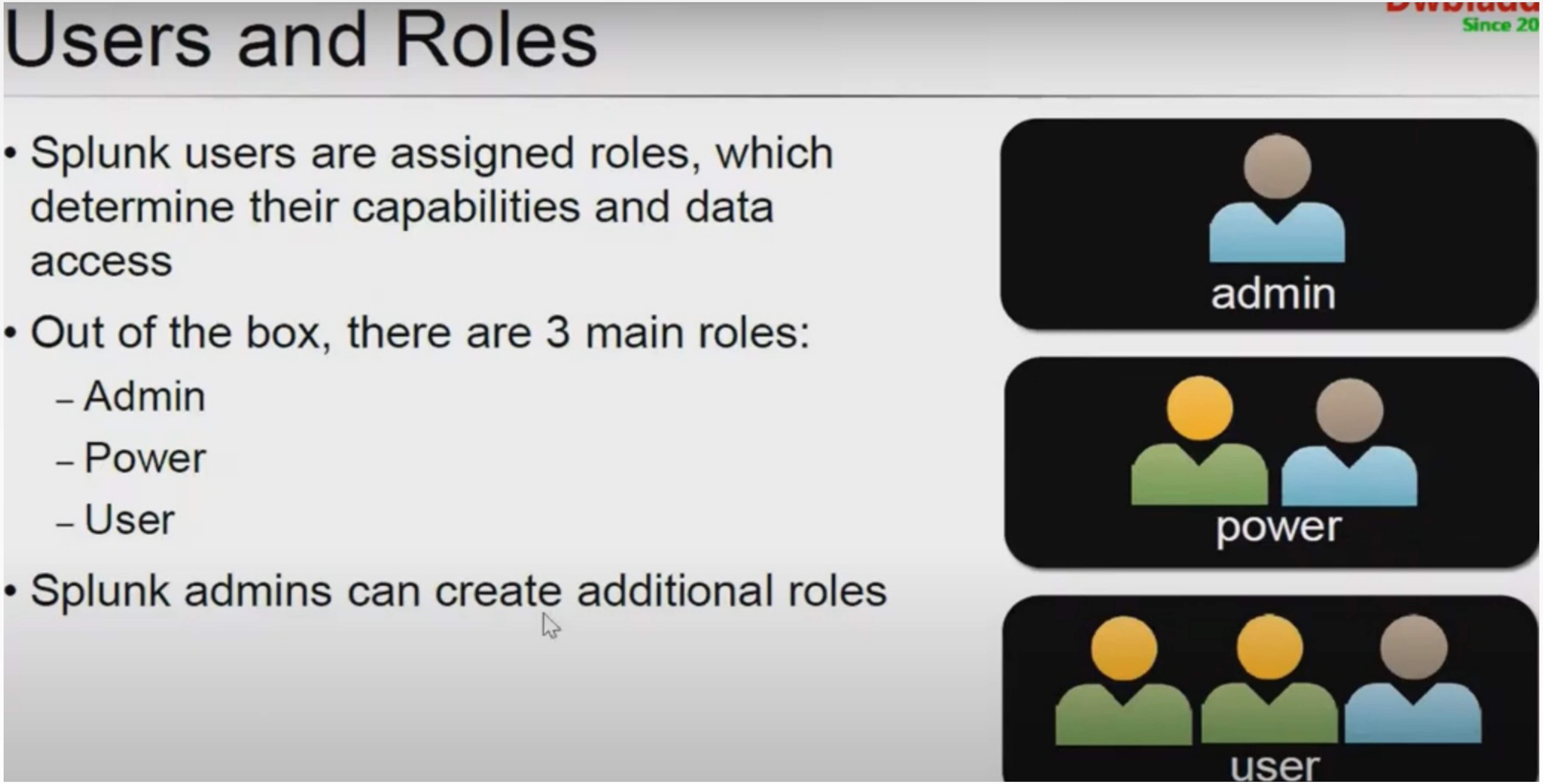
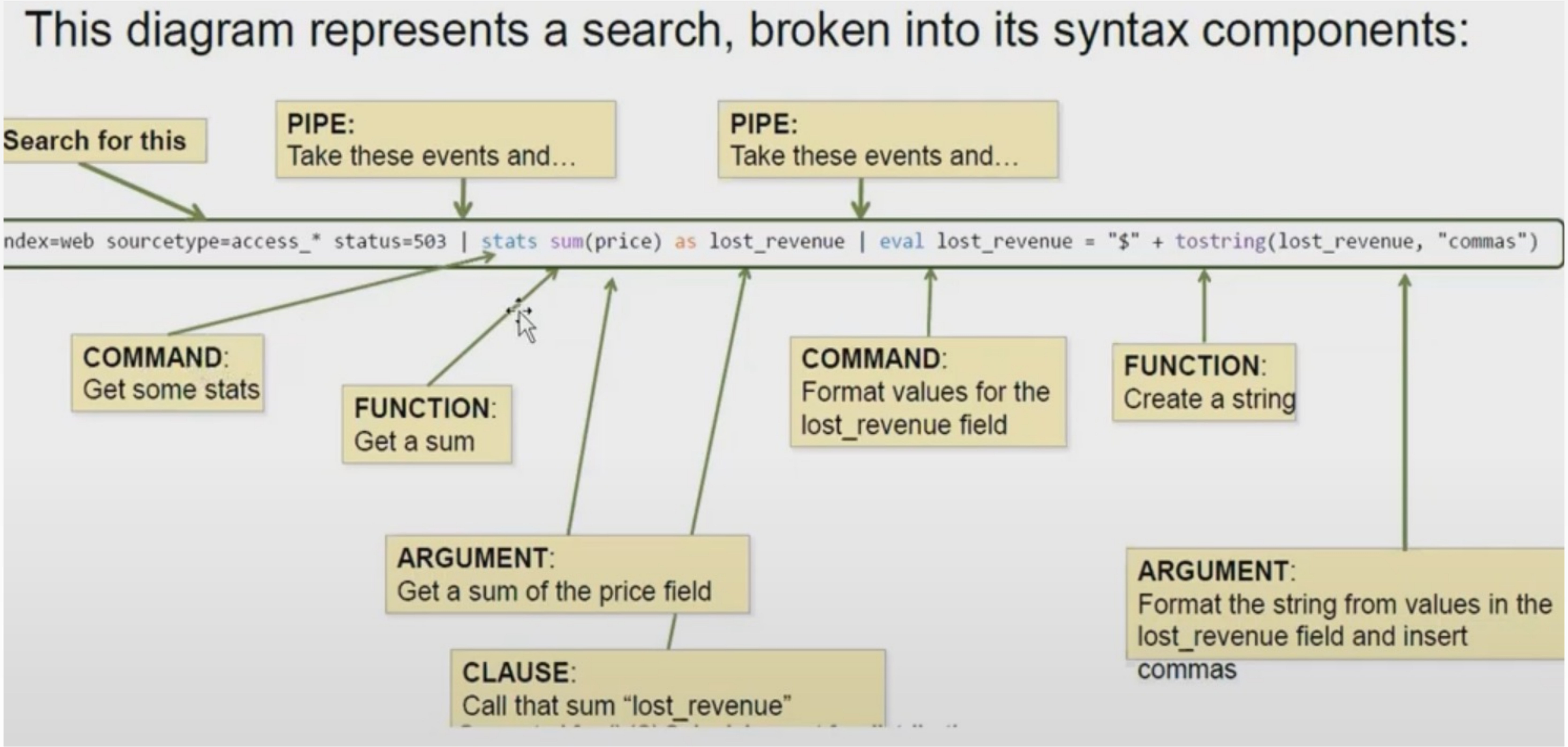


Users and Roles

- Splunk users are assigned roles, which determine their capabilities and data access
- Out of the box, there are 3 main roles:
  - Admin
  - Power
  - User
- Splunk admins can create additional roles



This diagram represents a search, broken into its syntax components:

```
ndex=web sourcetype=access_* status=503 | stats sum(price) as lost_revenue | eval lost_revenue = "$" + tostring(lost_revenue, "commas")
```

Search for this

PIPE:
Take these events and…

PIPE:
Take these events and…

COMMAND:
Get some stats

FUNCTION:
Get a sum

COMMAND:
Format values for the lost_revenue field

FUNCTION:
Create a string

ARGUMENT:
Get a sum of the price field

ARGUMENT:
Format the string from values in the lost_revenue field and insert commas

CLAUSE:
Call that sum "lost_revenue"

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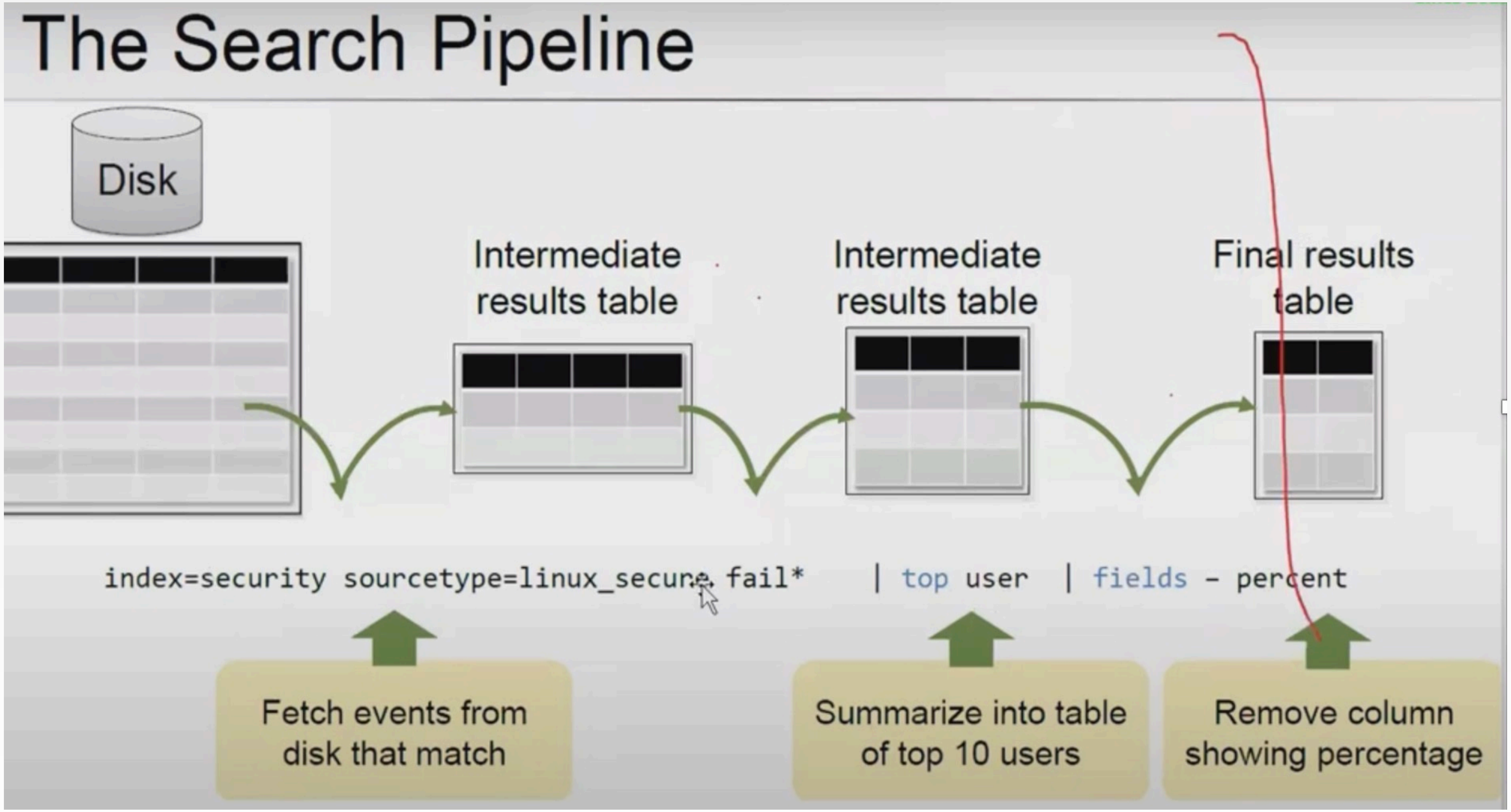

The Search Pipeline

Disk

Intermediate results table

Intermediate results table

Final results table

```
index=security sourcetype=linux_secure fail*    | top user  | fields - percent
```

Fetch events from disk that match

Summarize into table of top 10 users

Remove column showing percentage

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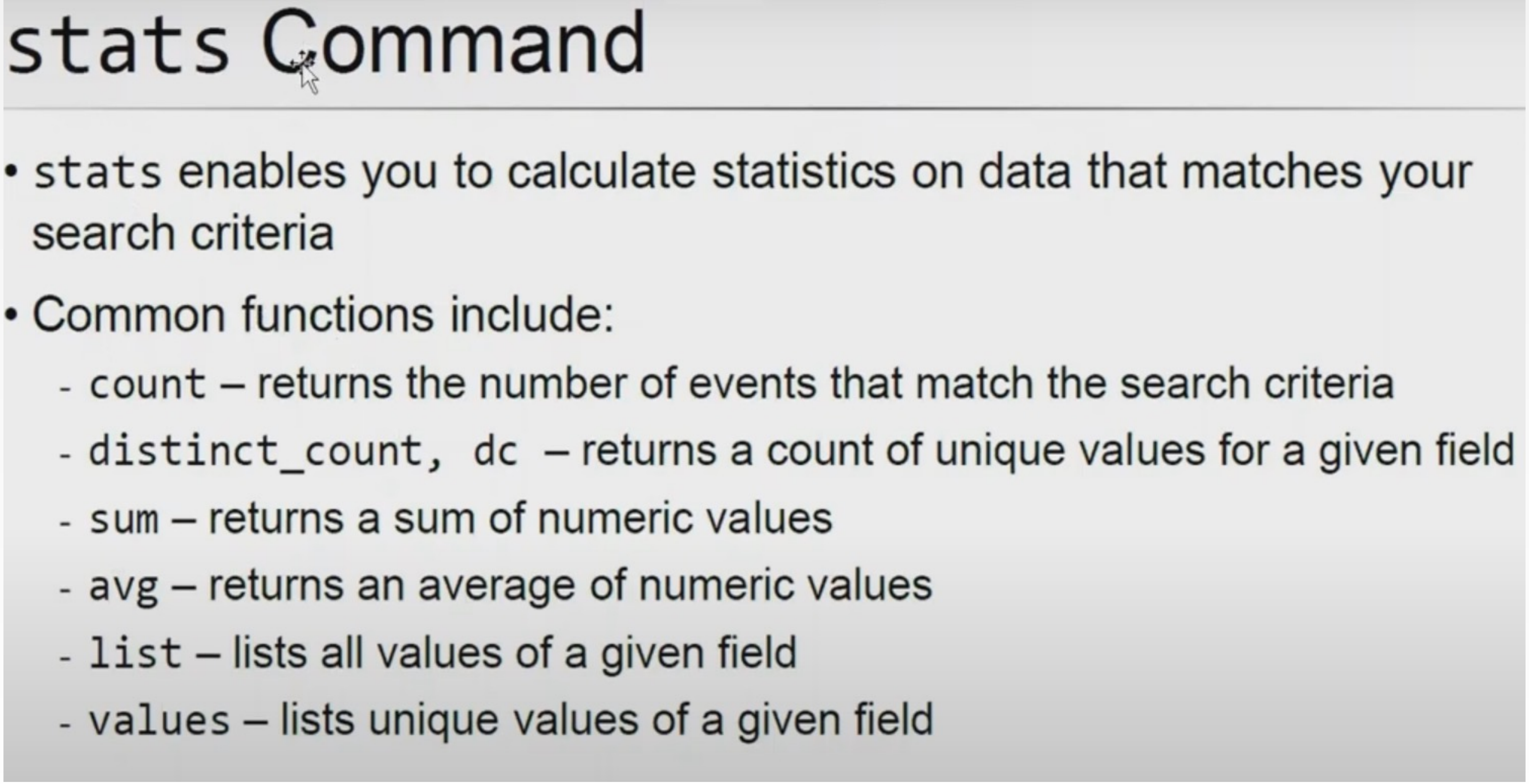

`stats` Command

- `stats` enables you to calculate statistics on data that matches your search criteria
- Common functions include:
  - `count` – returns the number of events that match the search criteria
  - `distinct_count, dc` – returns a count of unique values for a given field
  - `sum` – returns a sum of numeric values
  - `avg` – returns an average of numeric values
  - `list` – lists all values of a given field
  - `values` – lists unique values of a given field

Thank You

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