

2.3.4.2 State of Data Taxonomy

[Return to Data Taxonomy](#)

Overview

[Return to Top](#)

Data can exist in many states depending on how it is being used. The risks and concerns about Data in each of the different states are also important. Often, the primary focus for understanding data is to concentrate on [Data-at-Rest](#). Although this data is relatively static, it can change over time. In the past, there was little concern for [Data-in-Motion](#), which can have serious effects on [Reliability, Maintainability, and Availability \(RAM\)](#), as well as, [Securability](#) and can leave a system vulnerable to breaches. With the advent of HTTPS, these vulnerabilities are mitigated. The latest issue has become the need to secure [Data-in-Use](#). A recent WhatsApp data breach ¹⁾ found that switching data between image filters could cause memory corruption followed by a crash that left data exposed.

Figure 1 graphically represents the different Data States within a system. Most systems are now able to handle the Data-in-Motion and the Data-at-Rest issues but have traditionally relied on physical security to protect Data-in-Use.

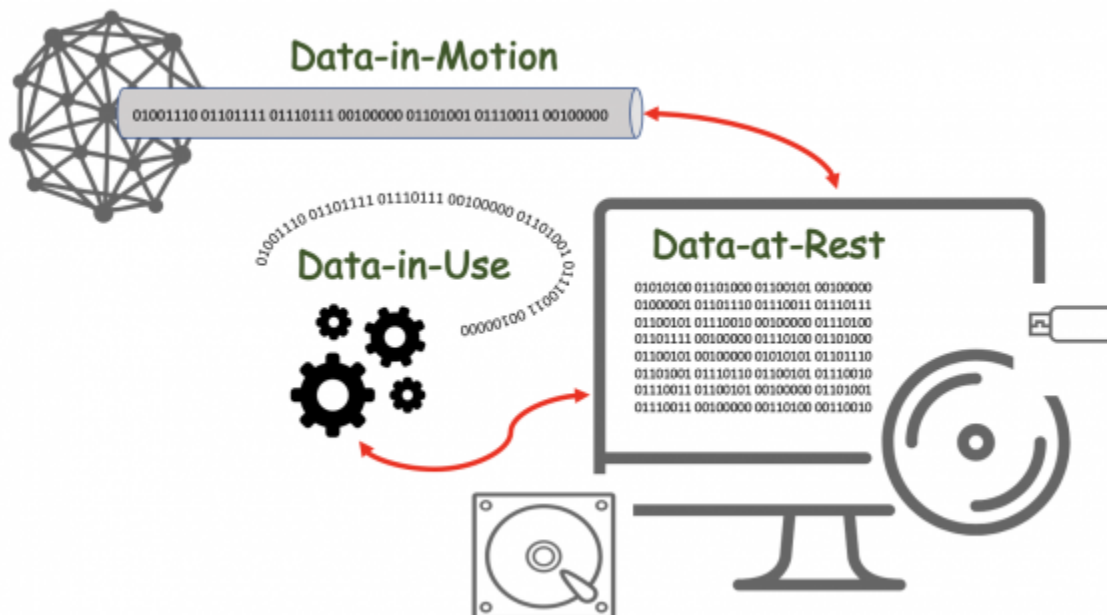


Figure 1: The various States of Data

Data States

[Return to Top](#)

The only way to control access to the data at the various Data States is to control all aspects of the system:

- Data Storage
- Data Transmission
- Data Processing

Therefore, a very important Function Decision to make is what is the nature of the [Distributed System Network Access Control](#).

Network access control [taxonomy](#) classifies the types of access individuals (i.e., [nodes](#)) have from outside and from within the [node network](#). The two main classes of [access control](#) are [permissionless](#) and [permissioned](#).²⁾

Within each of these two classifications it is possible to have [public](#) and [private](#) access. Public and private access define who is able to write data onto a network or [ledger](#). In contrast, open (i.e., permissionless) and closed (i.e., permissioned) determine who is able to read the data. Networks are classified as³⁾:

- public and open
- public and closed
- private and open
- private and closed

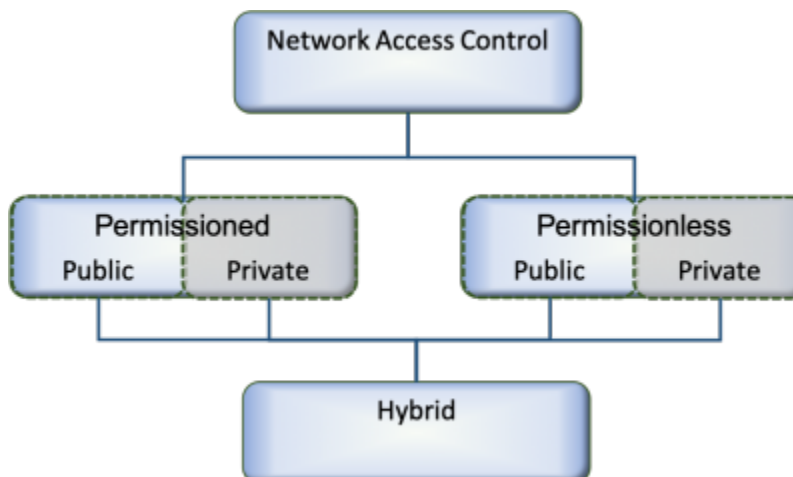


Figure 2: The Node Network Access Taxonomy

Data can exist in the following states:

- [2.3.4.2.1 Data-at-Rest](#)
- [2.3.4.2.2 Data-in-Motion](#)
- [2.3.4.2.3 Data-in-Use](#)

☒ [char][✓ char, 2022-03-17][New section -- review plus all subsections](#)

Czarina Grace, WhatsApp Data Breach 2021 Could Expose 2 Billion Users: Update Now on Android, iOS to Fix Security Risk, iTechPost, 6 September 2021, Accessed 6 October 2021,
<https://www.itechpost.com/articles/106929/20210906/whatsapp-data-breach-2021-expose-2-billion-users-update-now.htm>

2) 3)

“Public Vs Private Blockchain In A Nutshell”, Demiro Massessi, 12 December 2018,
<https://medium.com/coinmonks/public-vs-private-blockchain-in-a-nutshell-c9fe284fa39f>

From:

<https://www.omgwiki.org/dido/> - **DIDO Wiki**

Permanent link:

https://www.omgwiki.org/dido/doku.php?id=dido:public:ra:1.2_views:3_taxonomic:4_data_tax:02_state_taxonomy:start

Last update: **2022/04/23 21:45**

