PDEP 0001 - Hosts

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Contents

1 Abstract

This initial PDEP sets up the structure for hosts powering Python Discord applications. It does not make comments specifically on a provider, but will advise on recommended specifications, hostnames and some application allocation/host purpose.

2   Specifications

It is recommended that Python Discord uses 5 servers with specifications equal or greater than:

Resource	Recommendation
CPU	10 cores (dedicated, AMD recommended)
RAM	64GB DDR4
Disk	2TB
Network	2.5Gbps

Combined, this gives us a total compute power of 50 CPU cores, 320GB RAM and 10TB storage.

3   Hostnames

Hosts should be named after notable people within Computer Science.

The first 5 hosts will be named after the following Computer Scientists:

3.1   `turing` - Alan Turing

Alan Turing was involved with the development of theoretical Computer Science, coining concepts such as a "Turing machine".

3.2   `lovelace` - Ada Lovelace

Ada Lovelace is widely regarded as the first computer programmer after realising that Charles Babbage's *Analytical Engine* had more potential than pure mathematics.

3.3   `hopper` - Grace Hopper

Grace Hopper was one of the first programmers of the Harvard Mark I and created one of the first linkers. The FLOW-MATIC computer language she developed went on led the groundwork that went on to create COBOL.

3.4   `ritchie` - Dennis Ritchie

Dennis Ritchie was a highly influencial computer scientist who is known for his work on the C programming language, the creation of UNIX and the B programming language. He was also the "R" in K&R C, which is pretty cool.

3.5 `neumann` - John von Neumann

John von Neumann was a mathematician who invented several key computer science concepts, such as merge sort. He is also credited along with Stanislaw Ulam for the discovery of cellular automata. The Von Neumann CPU architecture is named after work Von Neumann completed in the 1940s.

4   Software Allocation

Hostname	Purpose
`turing`	Turing will be the primary application host, most applications maintained by Python Discord will operate on Turing
`lovelace`	The primary replicas for any databases should reside on Lovelace, for example PostgreSQL or MongoDB primaries.
`hopper`	Hopper will host read-only replicas for the data stores if required, it can also host primaries for monitoring tools (e.g. Graphite)
`ritchie`	Ritchie is dedicated to monitoring, any tools like Prometheus (and installed exporters, e.g. `postgres_exporter`) should reside on this host.
`neumann`	Neumann can be used for any statistic applications which require more resources, aside from that it can be used for storage (e.g. Minio)