

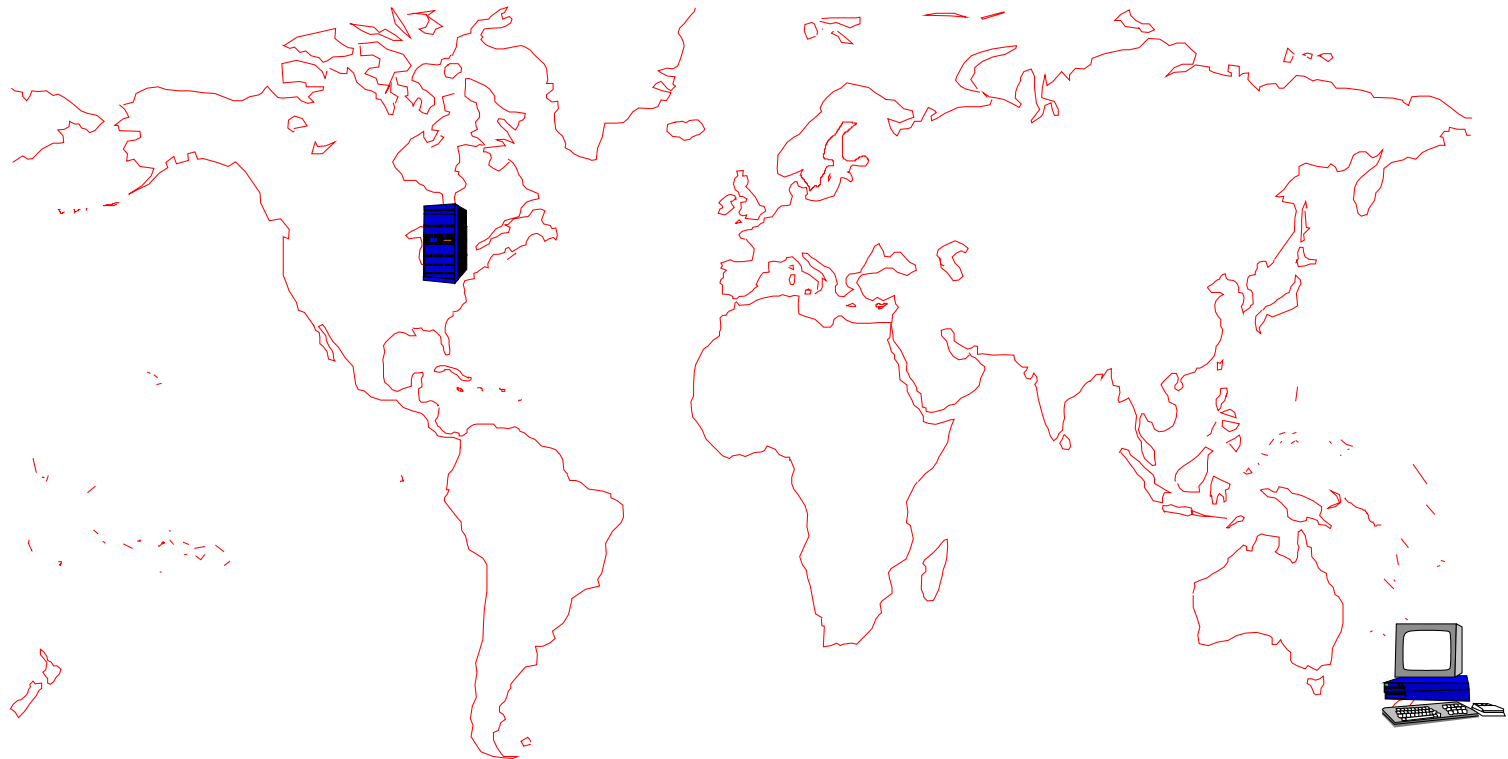
Handle Server Performance Tuning

Jason Petrone

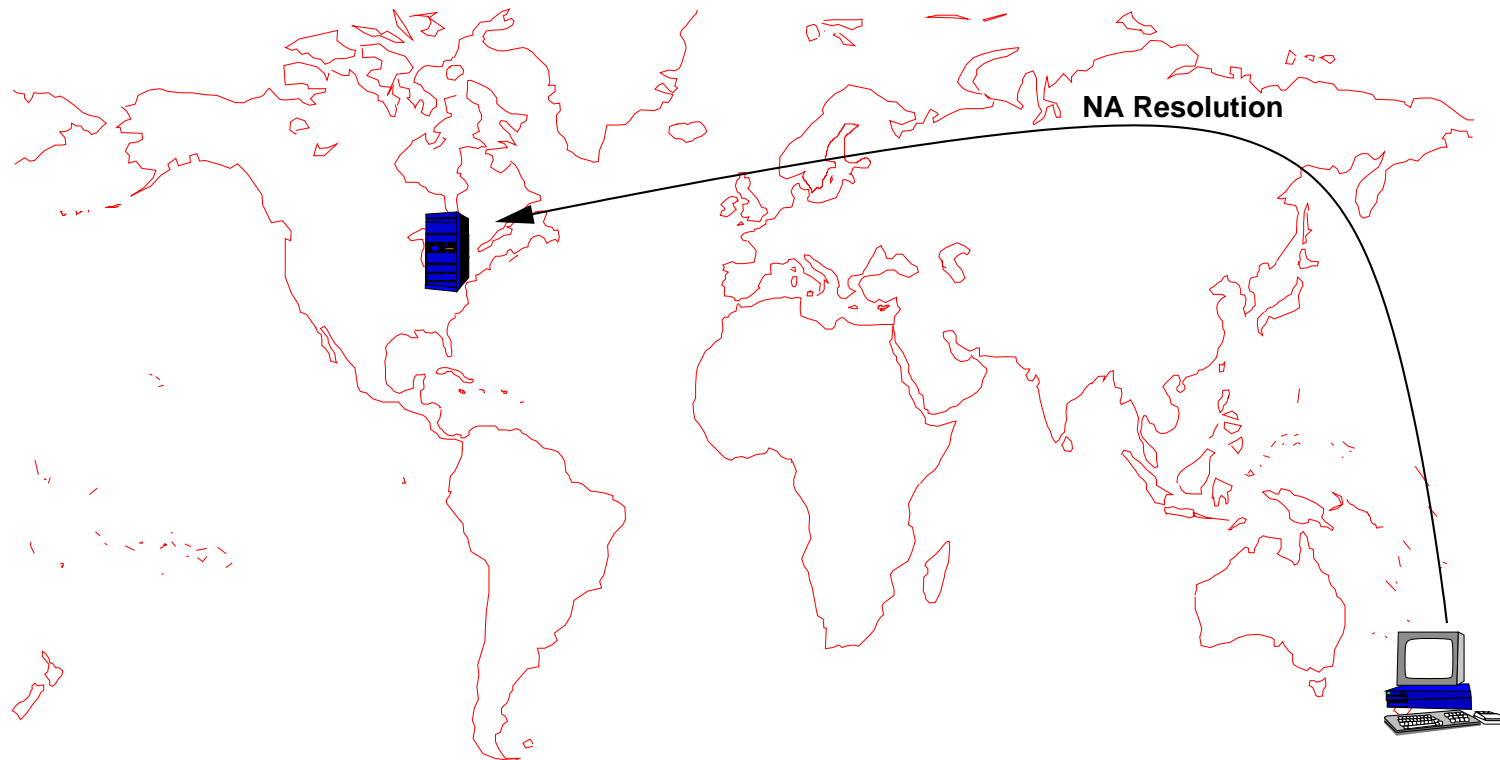
`<jpetrone@cnri.reston.va.us>`

Corporation for National Research Initiatives

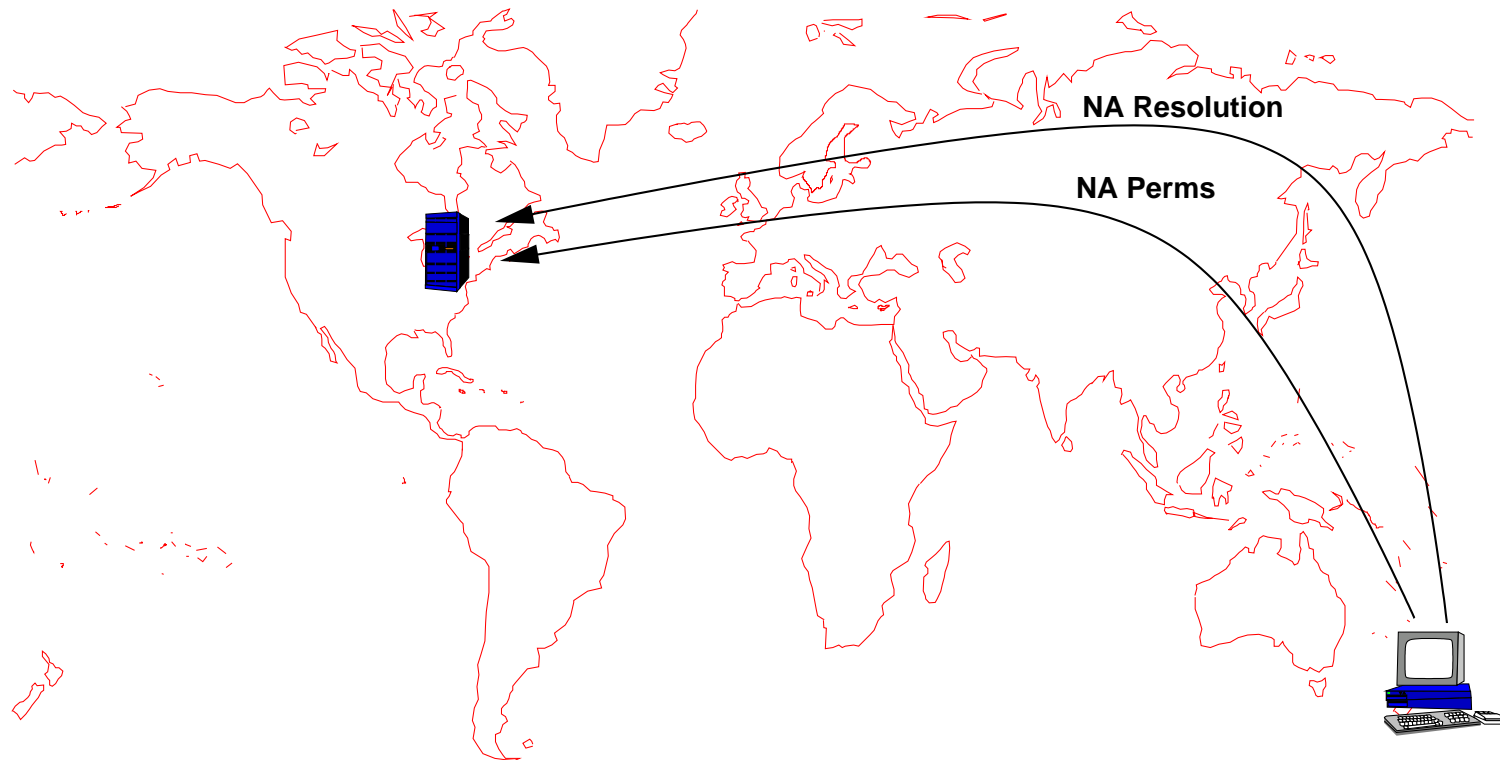
Reducing Trips to Global



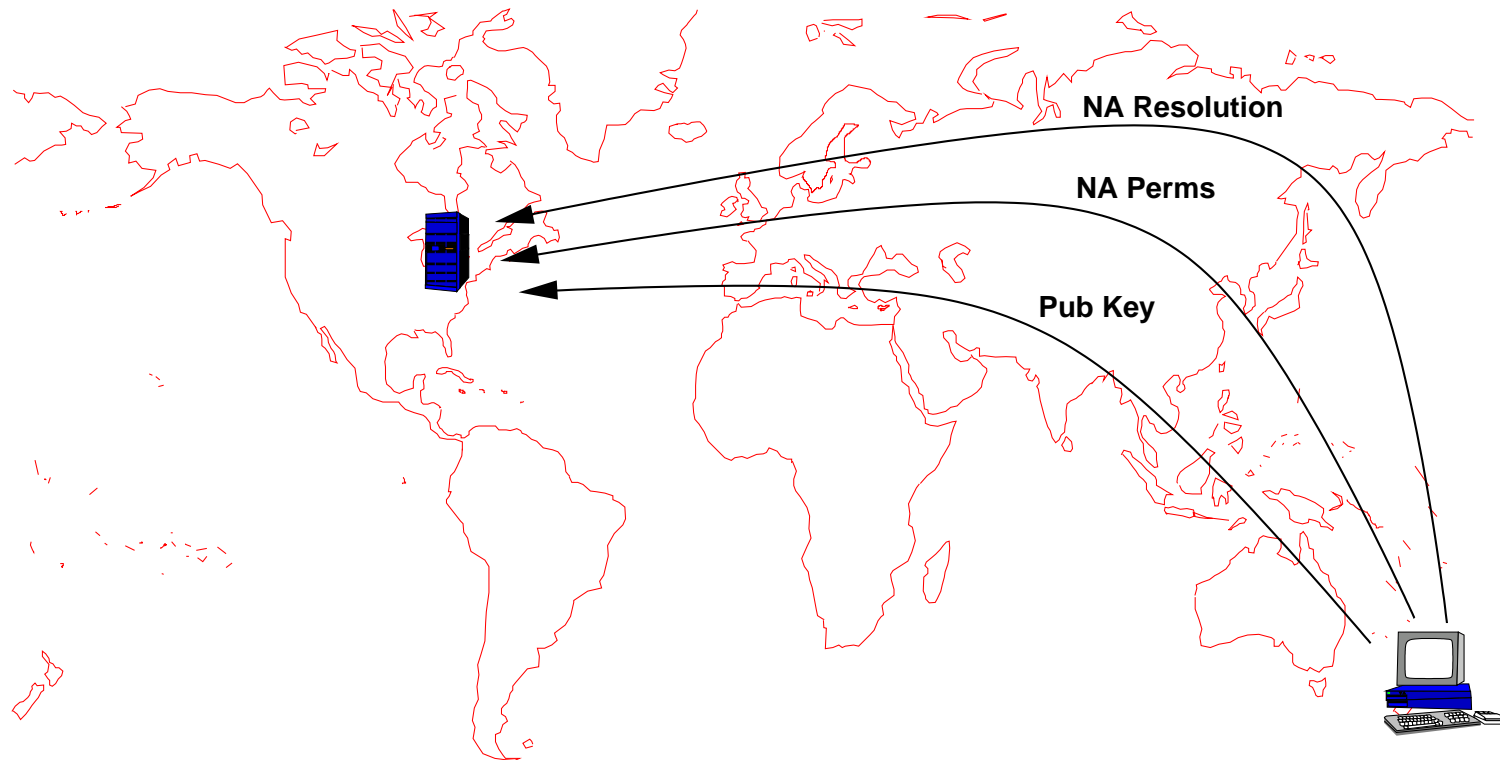
Reducing Trips to Global



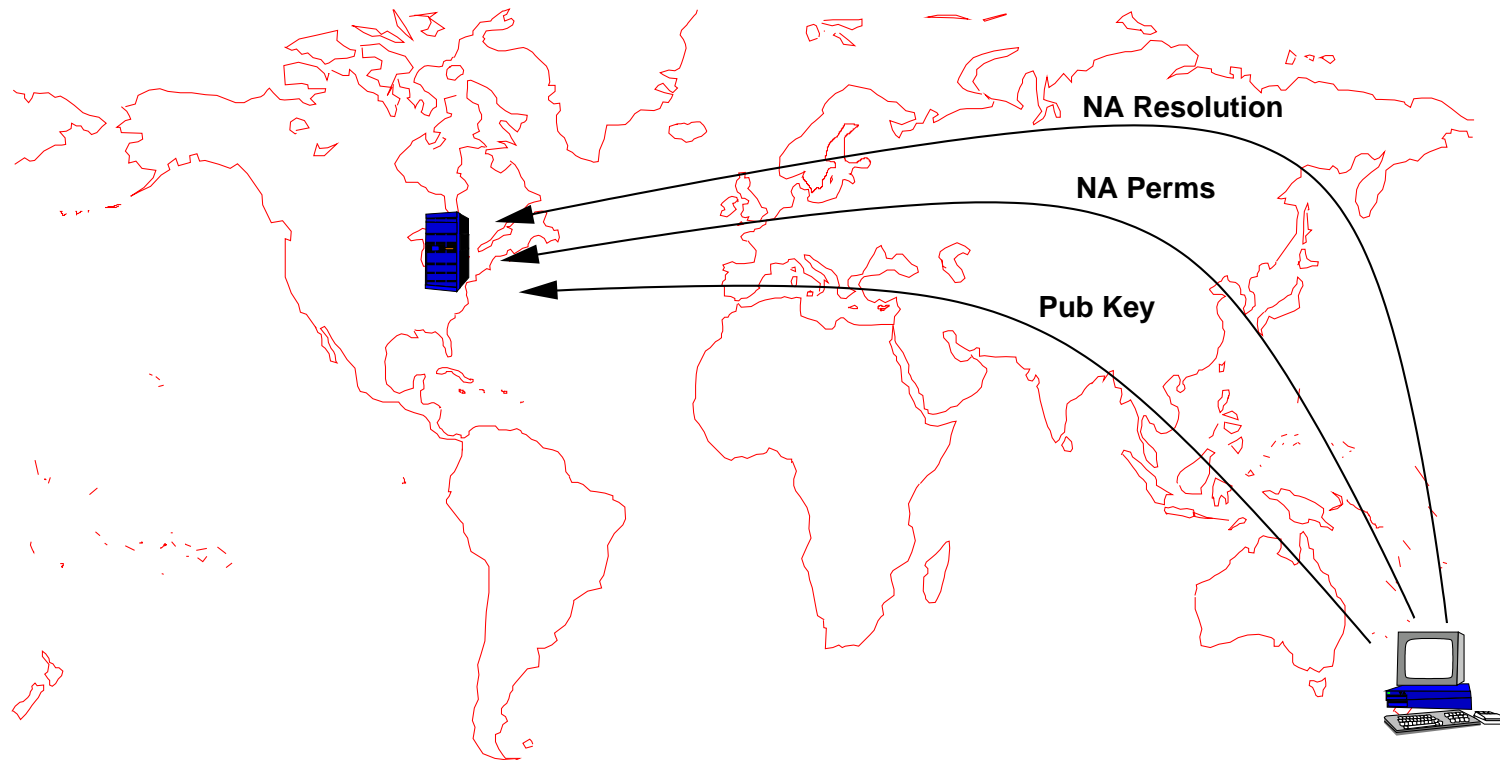
Reducing Trips to Global



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$$420ms \times 3 = 1.26s$$

Reducing Trips to Global

- ⑥ Keep public keys on local server, not global

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- ⑥ Keep public keys on local server, not global
- ⑥ Disable NA admins
- ⑥ Give server admins full access
- ⑥ Enable `trace_resolution` on server to verify
- ⑥ Configure client for local NAs (undocumented)

Setting a Preferred Global

⑥ Multiple global servers(2 in Reston, 2 in Los Angeles)

ping 209.225.25.25 avg:35.096ms

ping 198.32.1.37 avg:86.807ms

ping 198.32.1.73 avg:87.091ms

ping 132.151.1.179 avg:0.717ms

Setting a Preferred Global

⑥ Multiple global servers(2 in Reston, 2 in Los Angeles)

```
ping 209.225.25.25    avg:35.096ms
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ping 198.32.1.37      avg:86.807ms
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ping 198.32.1.73      avg:87.091ms
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ping 132.151.1.179    avg:0.717ms
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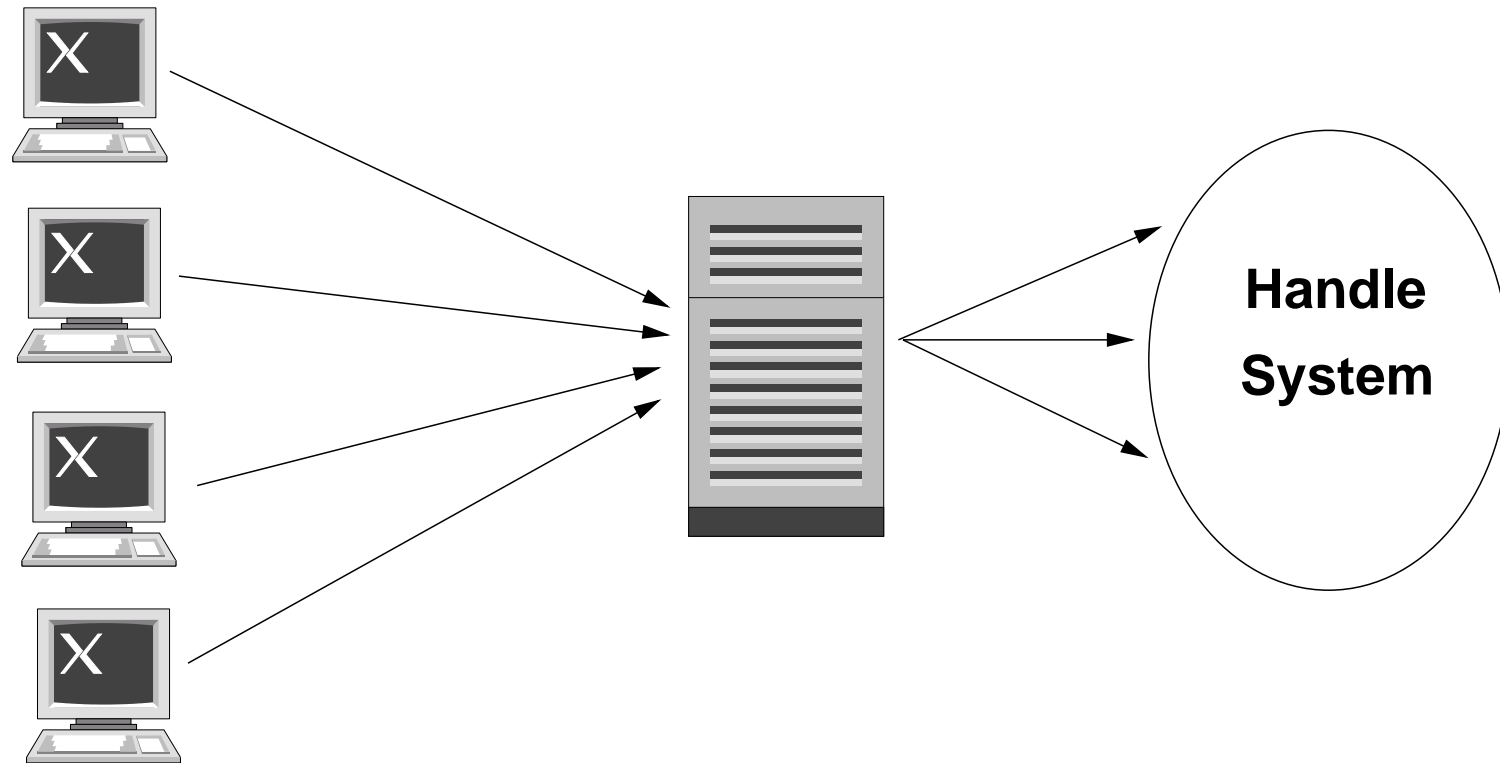
⑥ Set via Java properties:

```
java -Dhdl.lib.preferredGlobal=132.151.1.179
```

or

```
System.setProperty("preferredGlobal", "132.151.1.179");
```

Using a Caching Server



Using a Caching Server

- ⑥ Stripped down handle server

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Using a Caching Server

- ⑥ Stripped down handle server
- ⑥ Improves resolution for many clients
- ⑥ Can be used for localization/appropriate copy
- ⑥ Configuration setting for every client

Storage



Stock Handle Server Storage(jdb)

- ⑥ Fast for resolution and administration on small databases

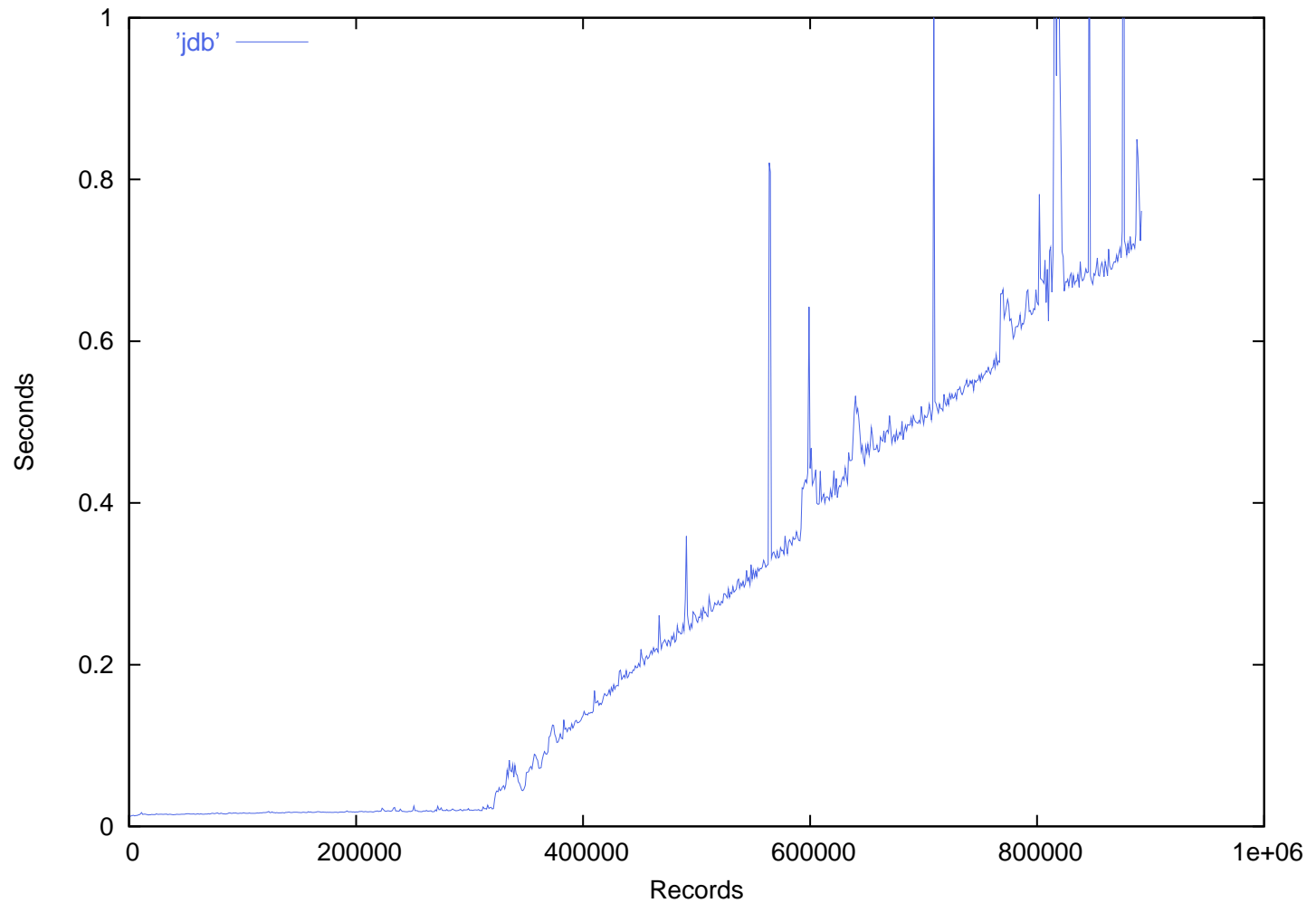
Storage



Stock Handle Server Storage(jdb)

- ⑥ Fast for resolution and administration on small databases
- ⑥ Administration begins to slow down around 300,000 handles

JDB Storage - Handle Creation



Custom Storage



But Its Okay Because... You can do it *your* way!

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⑥ In config.dct set:

```
storage_type = "custom"  
storage_class = "MyHdlDB"
```

Custom Storage

But Its Okay Because... You can do it *your* way!

- ⑥ In config.dct set:

```
storage_type = "custom"  
storage_class = "MyHdlDB"
```

- ⑥ Write MyHdlDB, implementing the
`net.handle.hdllib.HandleStorage` interface

BSD DB Storage

- ⑥ Fast, Free, Proven

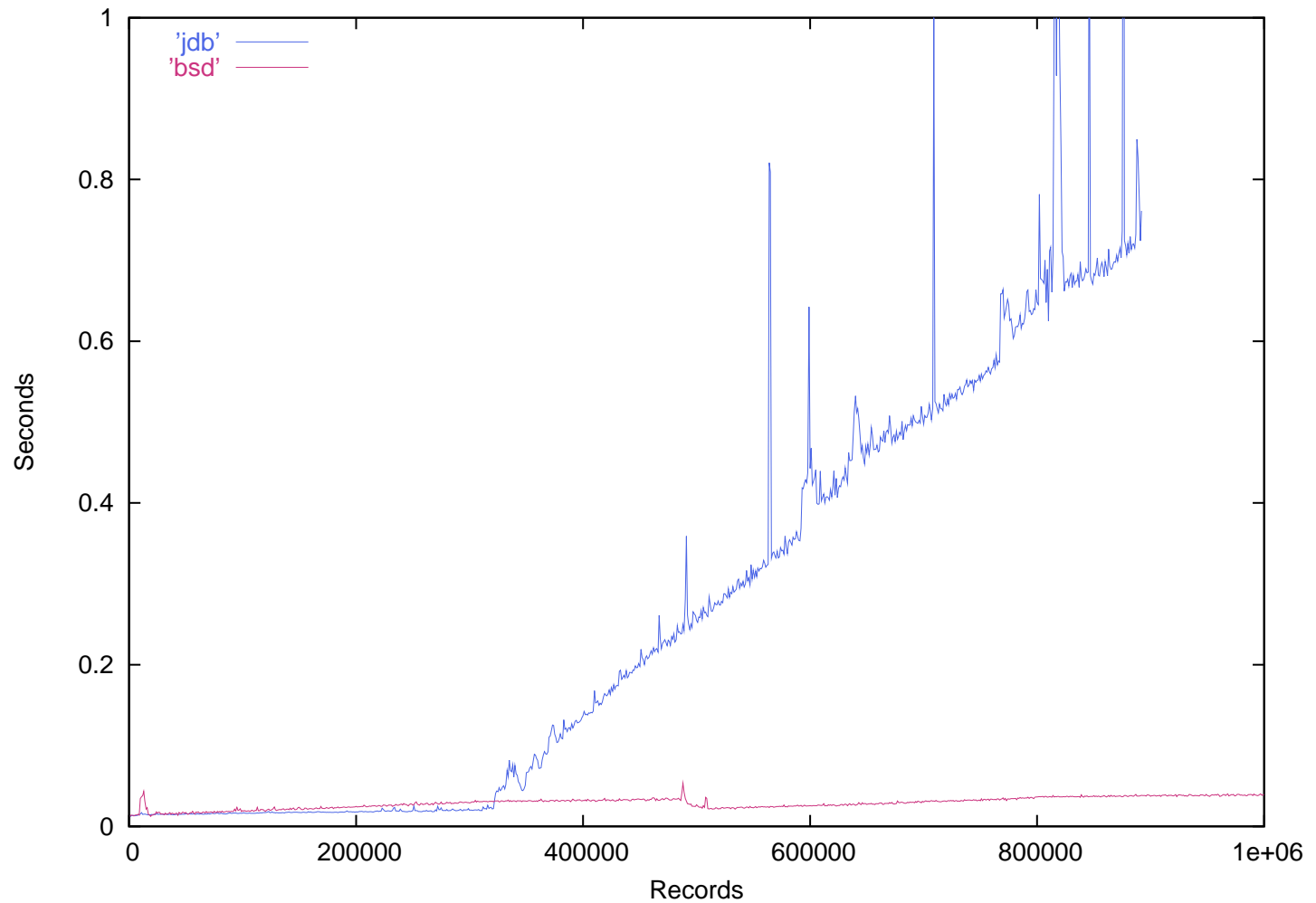
BSD DB Storage

- ⑥ Fast, Free, Proven
- ⑥ What we use for the DOI handle servers

BSD DB Storage

- ⑥ Fast, Free, Proven
- ⑥ What we use for the DOI handle servers
- ⑥ *But...* Written in C and hard to install

BSD DB Storage - Handle Creation



RDBMS Storage

- ⑥ Still in development

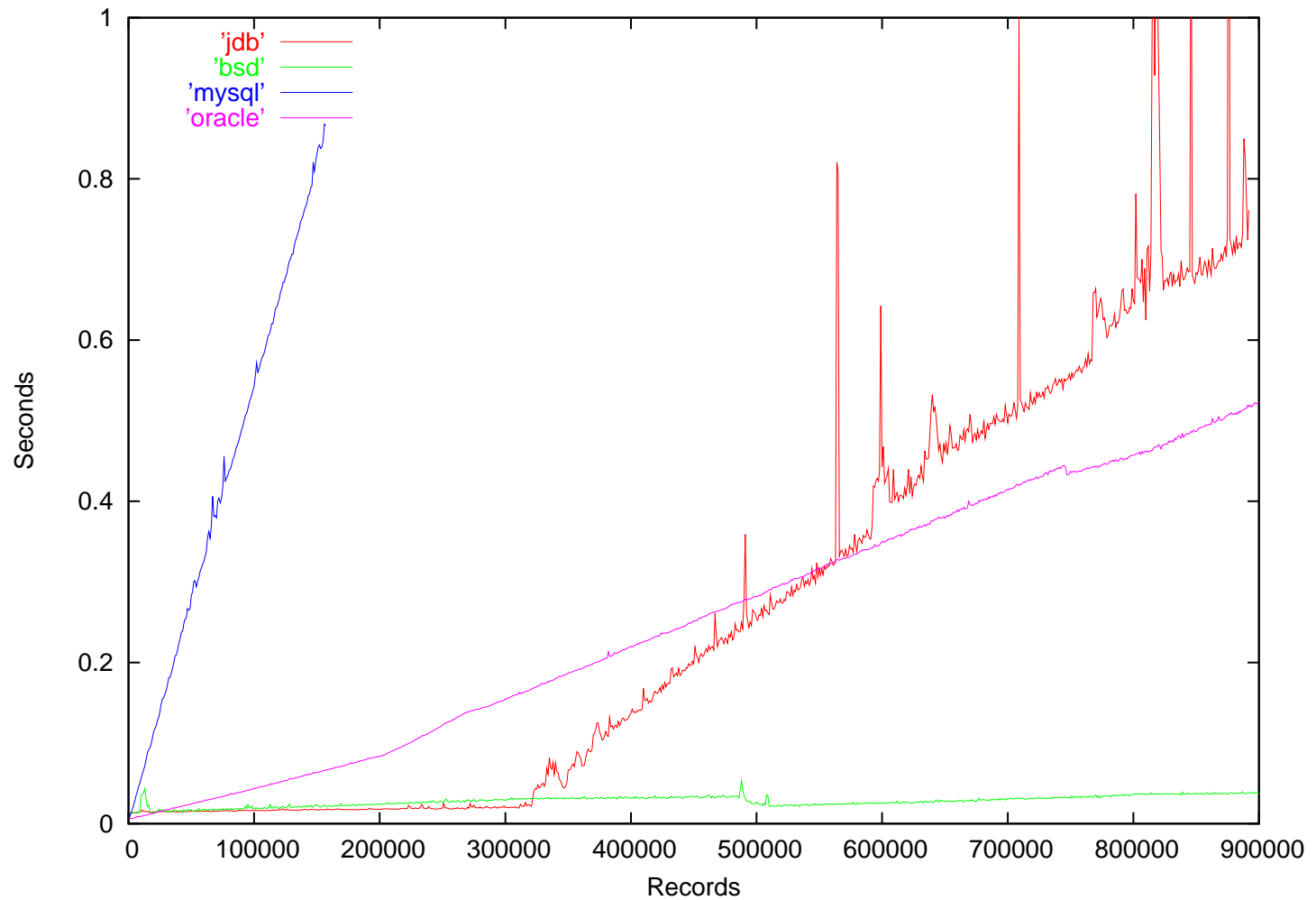
RDBMS Storage

- ⑥ Still in development
- ⑥ Not likely to improve handle server performance

RDBMS Storage

- ⑥ Still in development
- ⑥ Not likely to improve handle server performance
- ⑥ Better for offline administration and query

RDBMS Storage



Summary

- ⑥ Reducing trips to global
- ⑥ Setting a preferred global
- ⑥ Using a caching server
- ⑥ Using alternate storage