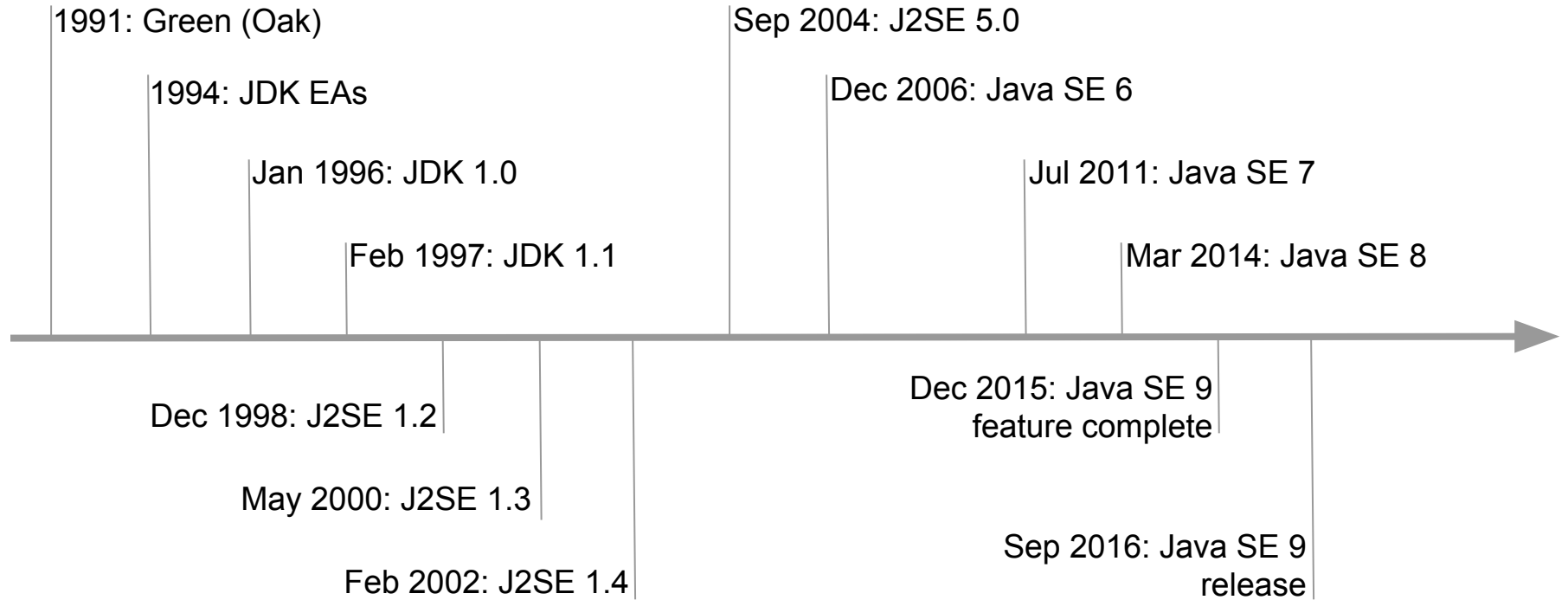


Taste of new in Java 9

Agenda

- A bit of history
- jshell
- JDK Benchmarks / jmh
- small stuff...
- jigsaw
- what's beyond 9?

Bit of history



New versioning scheme

- Current scheme:
 - Minor releases containing changes beyond security fixes are multiples of 20
 - Security releases based on the previous minor release are odd numbers incremented by five, or by six if necessary in order to keep the update number odd

New versioning scheme

- New scheme:
 - MAJOR.MINOR.SECURITY
 - 1.8.0 => 8.0.0
 - 1.8.0_05 => 8.0.1
 - 1.8.0_11 => 8.0.2
 - 1.8.0_20 => 8.1.2
 - 1.8.0_25 => 8.1.3

jshell



JDK Benchmark Suite

- based on JMH
- stable, tuned benchmarks
- targeted for continuous performance check
- lot of benchmarks for standard libraries
- comparison with JDK 8

Http/2

```
HttpResponse response = HttpRequest
    .create(new URI("http://www.ocado.com"))
    .body(noBody())
    .GET().send();
int responseCode = response.responseCode();
String responseBody = response.body(asString());

System.out.println(responseBody);
```


Http/2

```
HttpRequest req = HttpRequest
    .create(new URI("http://www.ocado.com"))
    .body(noBody())
    .GET();
CompletableFuture<HttpResponse> asyncResp = req.sendAsync();
Thread.sleep(10);
if (!asyncResp.isDone()) {
    asyncResp.cancel(true);
    System.err.println("timeout");
    return;
}
HttpResponse response = asyncResp.get();
```

JVM logging

-Xlog[:option]

```

option      := [<what>][:<output>][:
[<decorators>][:<output-options>]]]
              'help'
              'disable'

what        := <selector>[,...]
selector    := <tag-set>[*][=<level>]
tag-set     := <tag>[+...]
              'all'

tag         := name of tag
level       := trace
              debug
              info
              warning
              error

output      := 'stderr'
              'stdout'
              [file=]<filename>
  
```

```

decorators  := <decorator>[,...]
              'none'
  
```

```

decorator   := time
              uptime
              timemillis
              uptimemillis
              timenanos
              uptimenanos
              pid
              tid
              level
              tags
  
```

```

output-options := <output_option>[,...]
  
```

```

output-option := filecount=<file count>
                filesize=<file size in kb>
                parameter=value
  
```

Coin project - language adjustments

- allow `@SaveVargs` on private instance methods
- allow effectively-final variables in try-with-resources
- more type inference with generics
- underscore will be no more a valid identifier
- private methods in interfaces

Hotspot / JDK diagnostics

- `print_class_summary`
- `print_codegen_list`
- `print_utf8pool`
- `dump_codelist`
- `print_codeblocks`
- `set_vmflags`

Other...

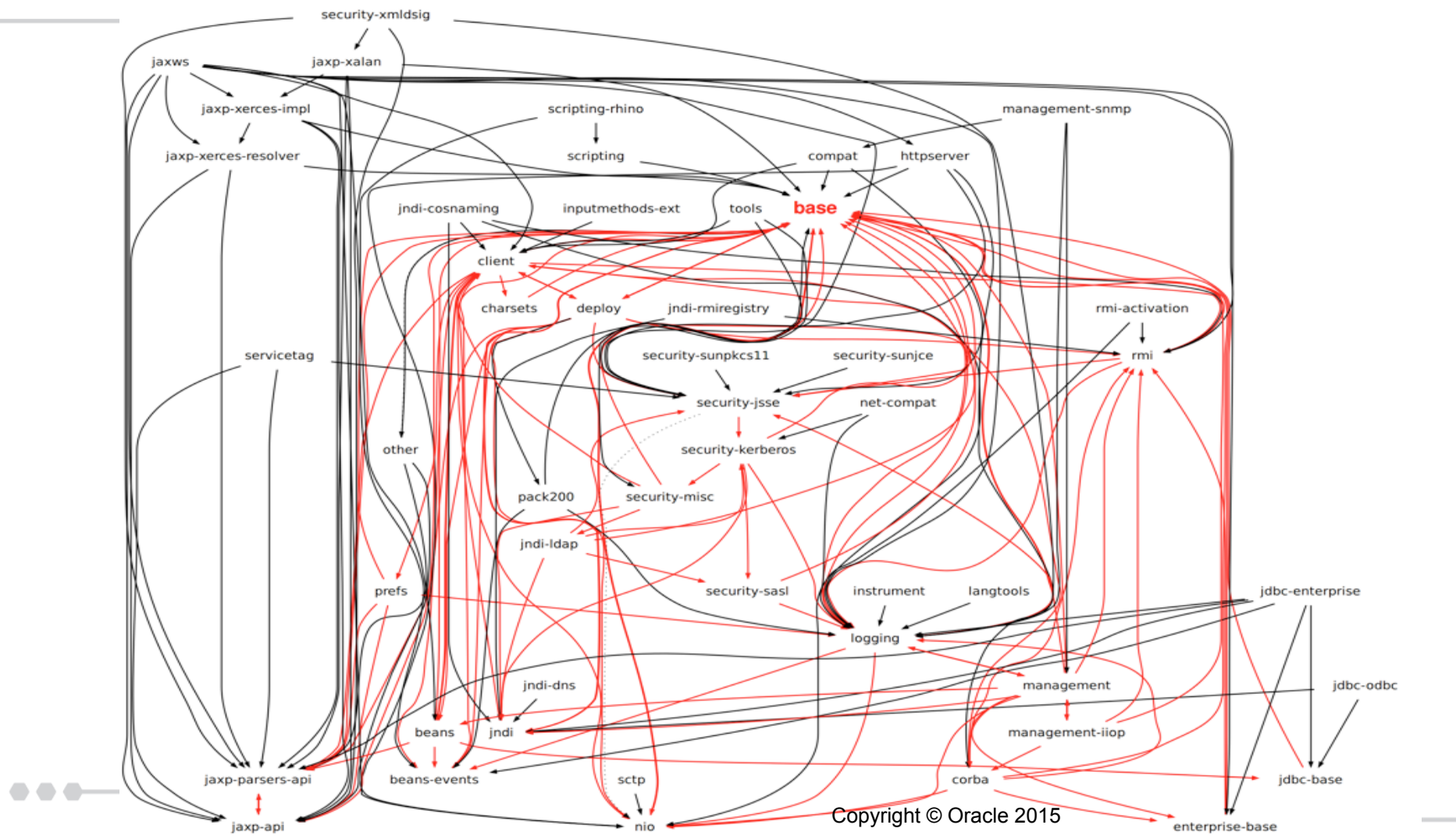
- improved contented locking
- variable handles (Unsafe!)
- sjavac
- fixed imports processing by javac
- Security (Datagram / Application transport layer)
- HTML5 javadoc
- Unicode 7.0

Other...

- String internal representation altered
- Java-Level JVM Compiler Interface
- Parser API for Nashorn
- Support for AArch64 (ARMv8) architecture
- Compile for Older Platform Versions
- G1 will be default garbage collector
- Store Interned Strings in CDS archives

Jigsaw - modules for Java

- Motivation:
 - JAR/classpath hell reduction
 - unexpressed/transitive dependencies
 - manual dependencies management
 - hide some (private) packages; `com.sun.misc.*`
 - system instead of manual security
 - JRE size reduction



Jigsaw - piece of action...

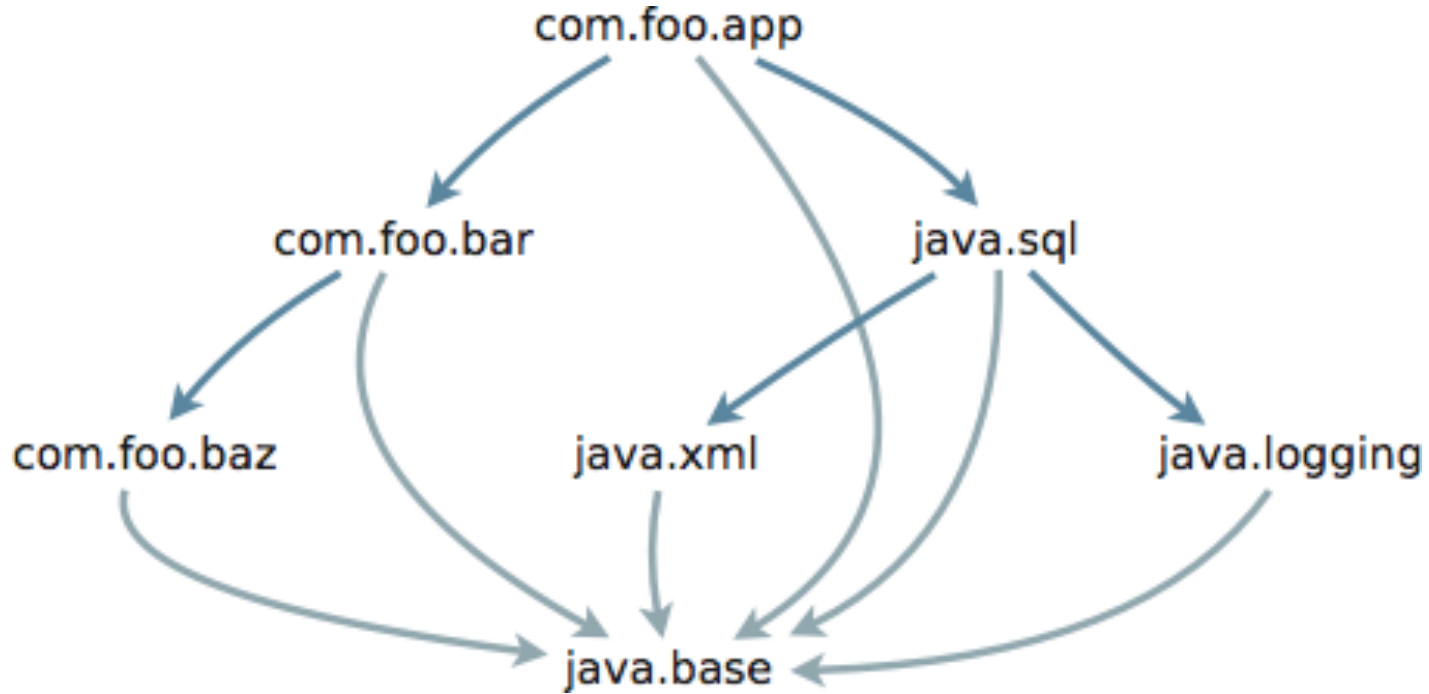


Jigsaw - one more example

```
module com.foo.app {  
    requires com.foo.bar;  
    requires java.sql;  
}
```

```
module java.sql {  
    requires java.logging;  
    requires java.xml;  
    exports java.sql;  
    exports javax.sql;  
    exports javax.transaction.xa;  
}
```

Jigsaw - one more example



Jigsaw - implied readability

```
String url = ...;
```

```
Properties props = ...;
```

```
Driver d = DriverManager.getDriver(url);
```

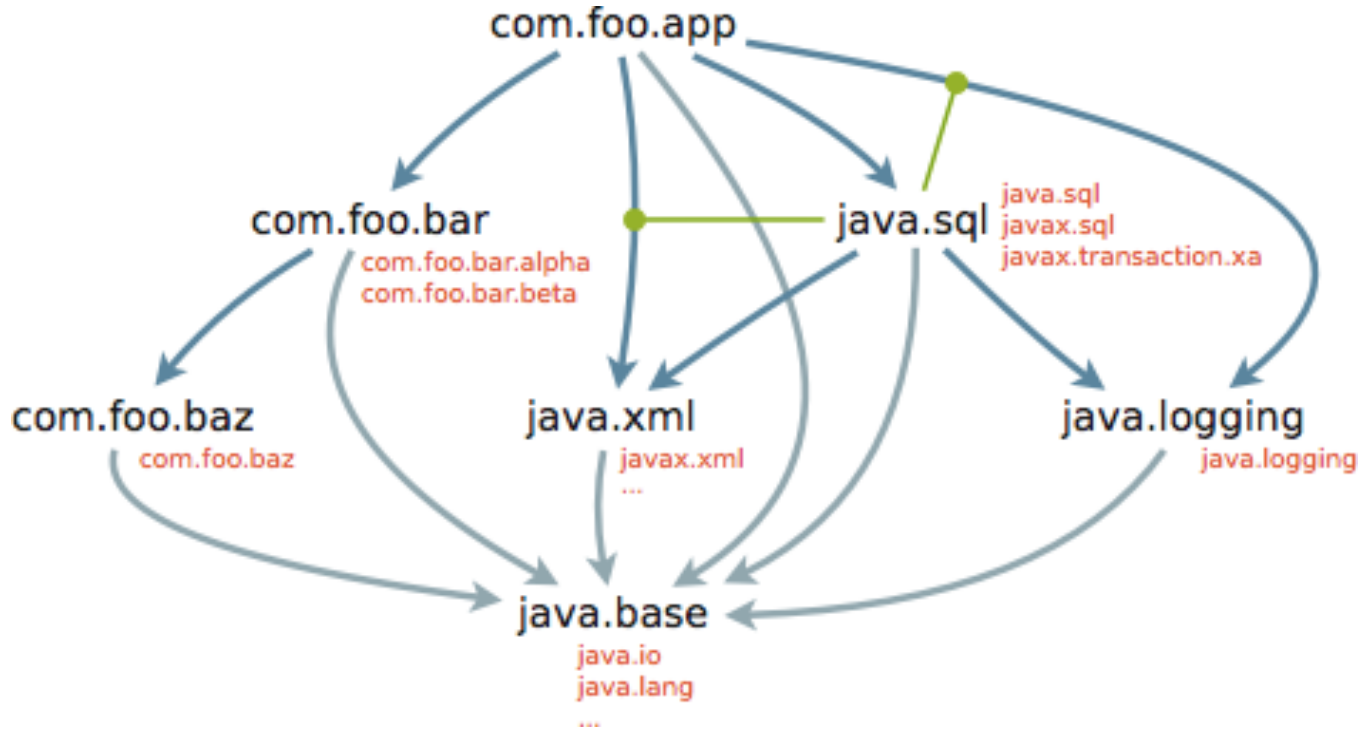
```
Connection c = d.connect(url, props);
```

```
d.getParentLogger().info("Connection acquired");
```

Jigsaw - implied readability

```
module java.sql {  
    requires public java.logging;  
    requires public java.xml;  
    exports java.sql;  
    exports javax.sql;  
    exports javax.transaction.xa;  
}
```

Jigsaw - implied readability



Jigsaw - services

```
module com.mysql.jdbc {  
    requires java.sql;  
    requires org.slf4j;  
    exports com.mysql.jdbc;  
}
```

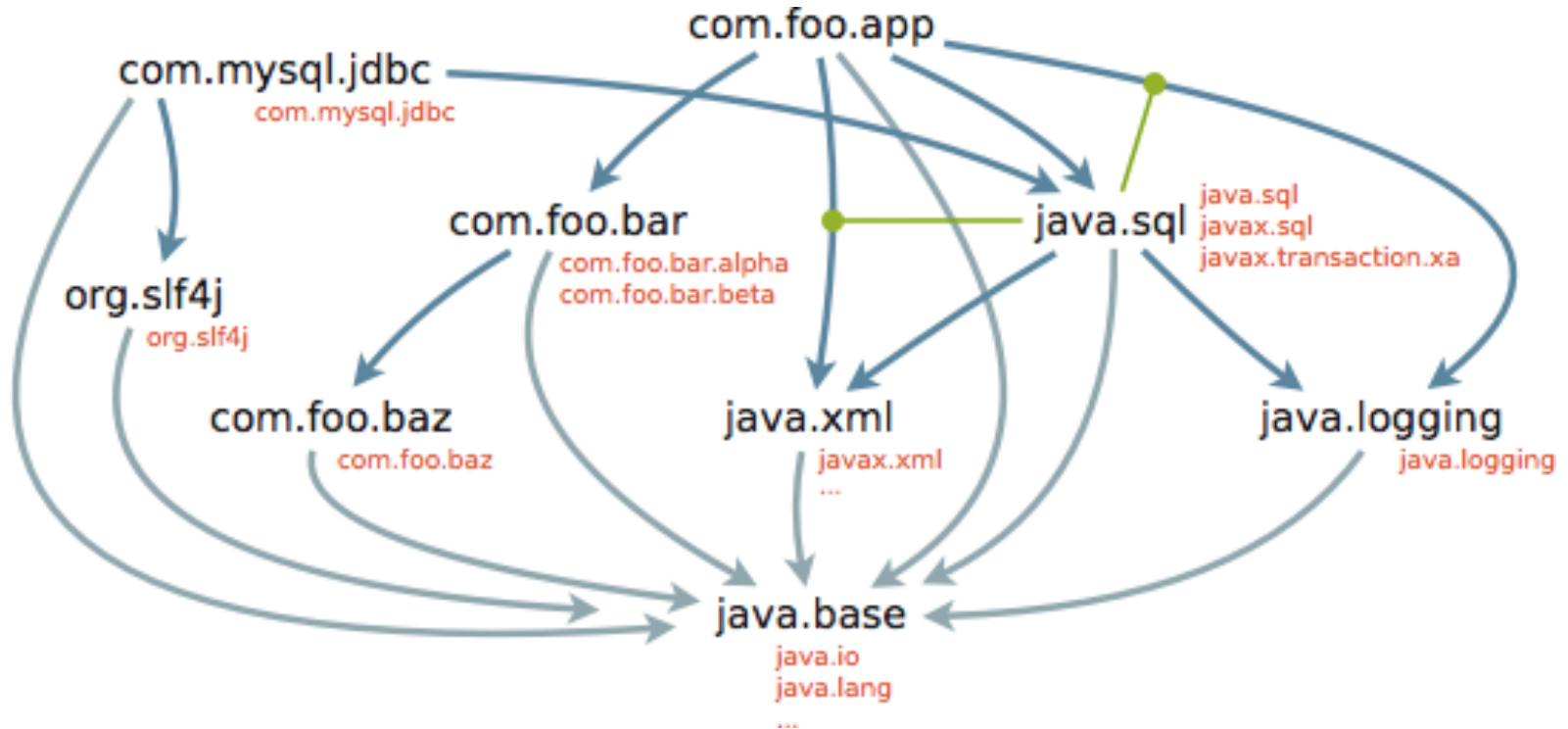

Jigsaw - services

```
module java.sql {  
    requires public java.logging;  
    requires public java.xml;  
    exports java.sql;  
    exports javax.sql;  
    exports javax.transaction.xa;  
    uses java.sql.Driver;  
}
```

Jigsaw - services

```
module com.mysql.jdbc {  
    requires java.sql;  
    requires org.slf4j;  
    exports com.mysql.jdbc;  
    provides java.sql.Driver with com.mysql.jdbc.Driver;  
}
```

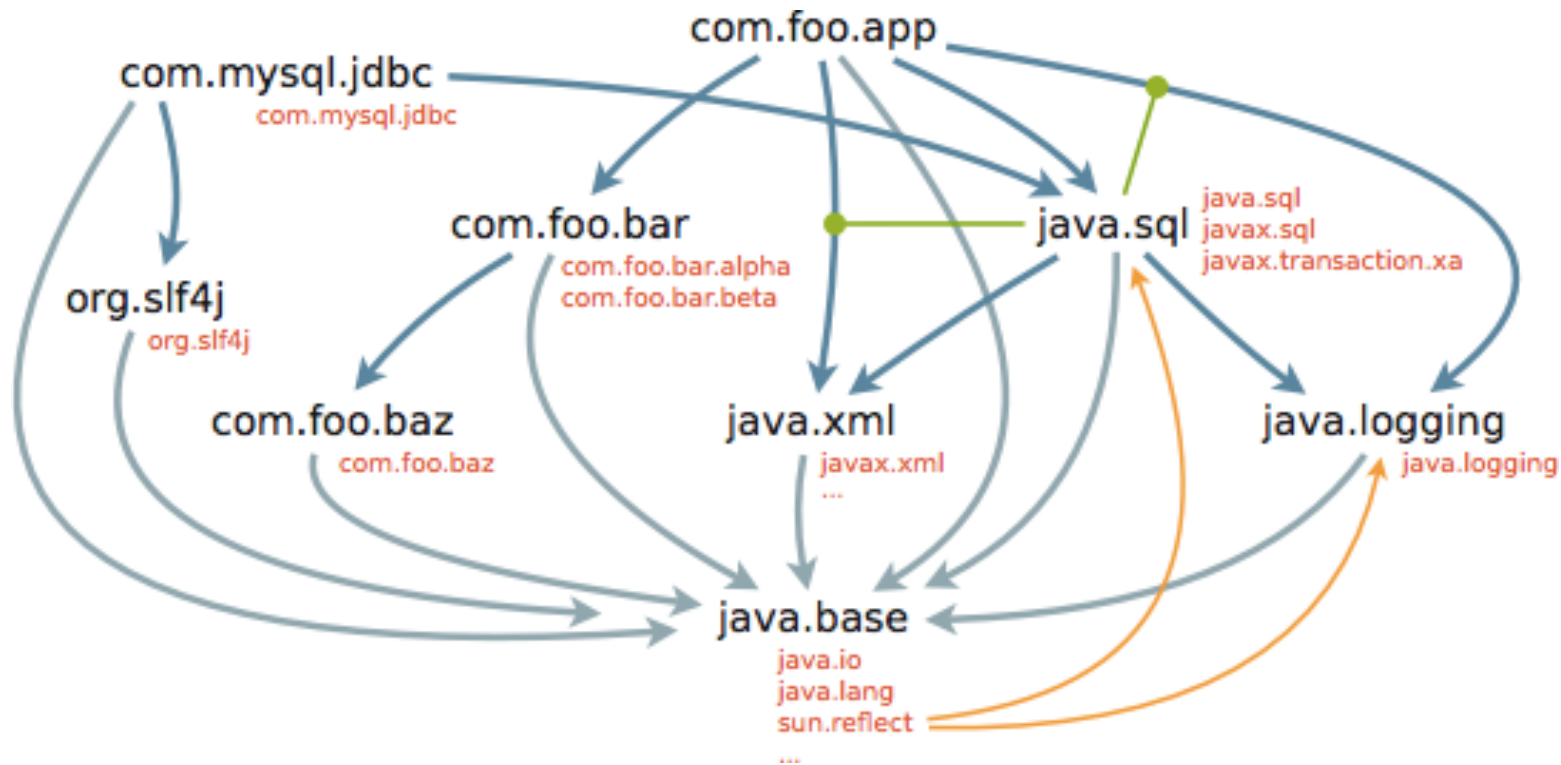
Jigsaw - services



Jigsaw - qualified exports

```
module java.base {  
    ...  
    exports sun.reflect to  
        java.corba,  
        java.logging,  
        java.sql,  
        java.sql.rowset,  
        jdk.scripting.nashorn;  
}
```

Jigsaw - qualified exports



Java 10: value classes

```
value class Point {  
    int x;  
    int y;  
    Point(int x, int y) {  
        this.x = x;  
        this.y = y;  
    }  
}
```

Java 10: generics

- Reified Generics
- Generics with values

```
List<int> intList = new ArrayList<>();
```

```
...
```

```
int val = intList.get(0);
```

```
class List$Point { Point get(Point index); }
```

Thank you!

...questions?