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Jigsaw. Take 2. Status update.

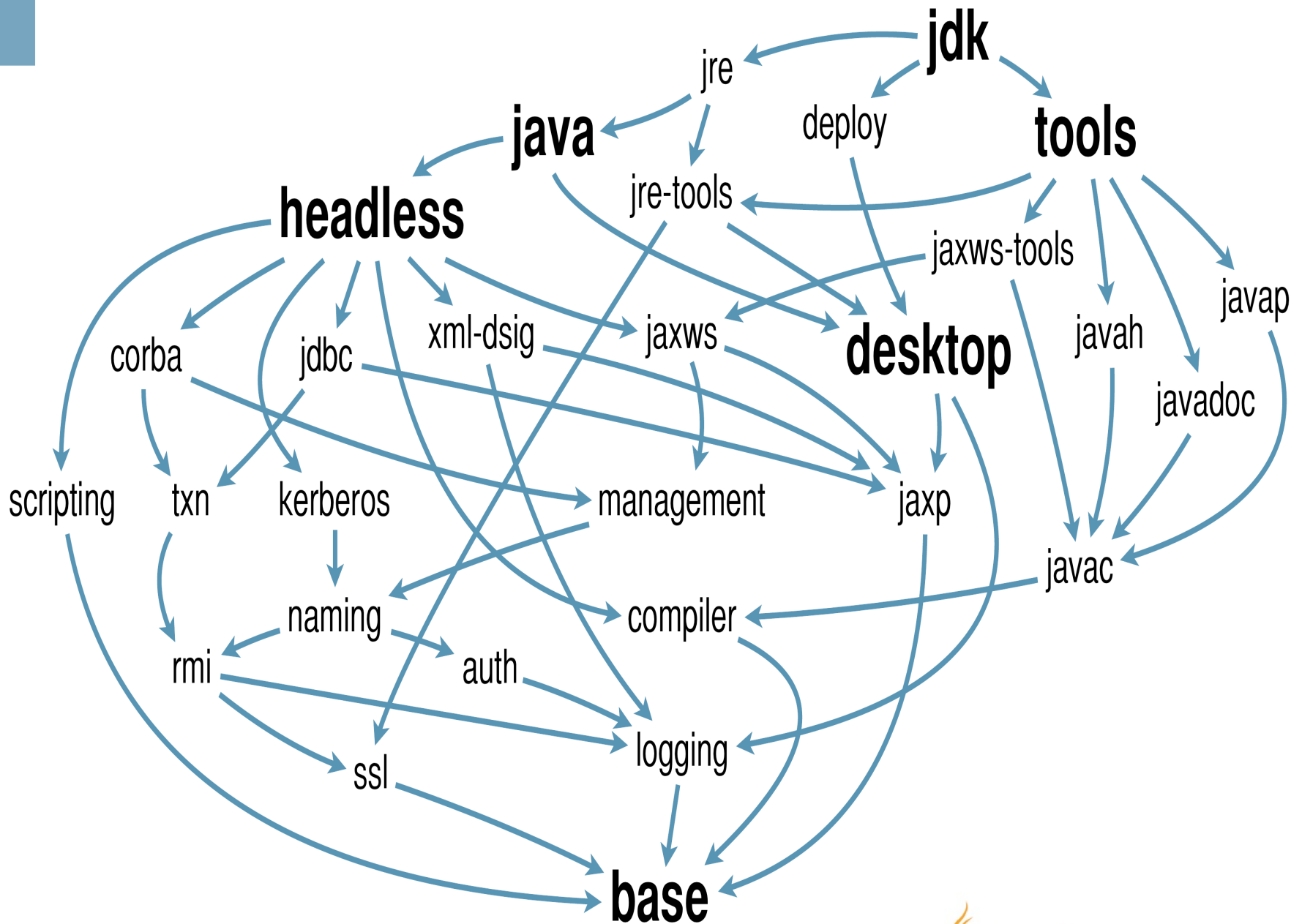
Alexandre (БІрґкф) Iline
Java Test Architect

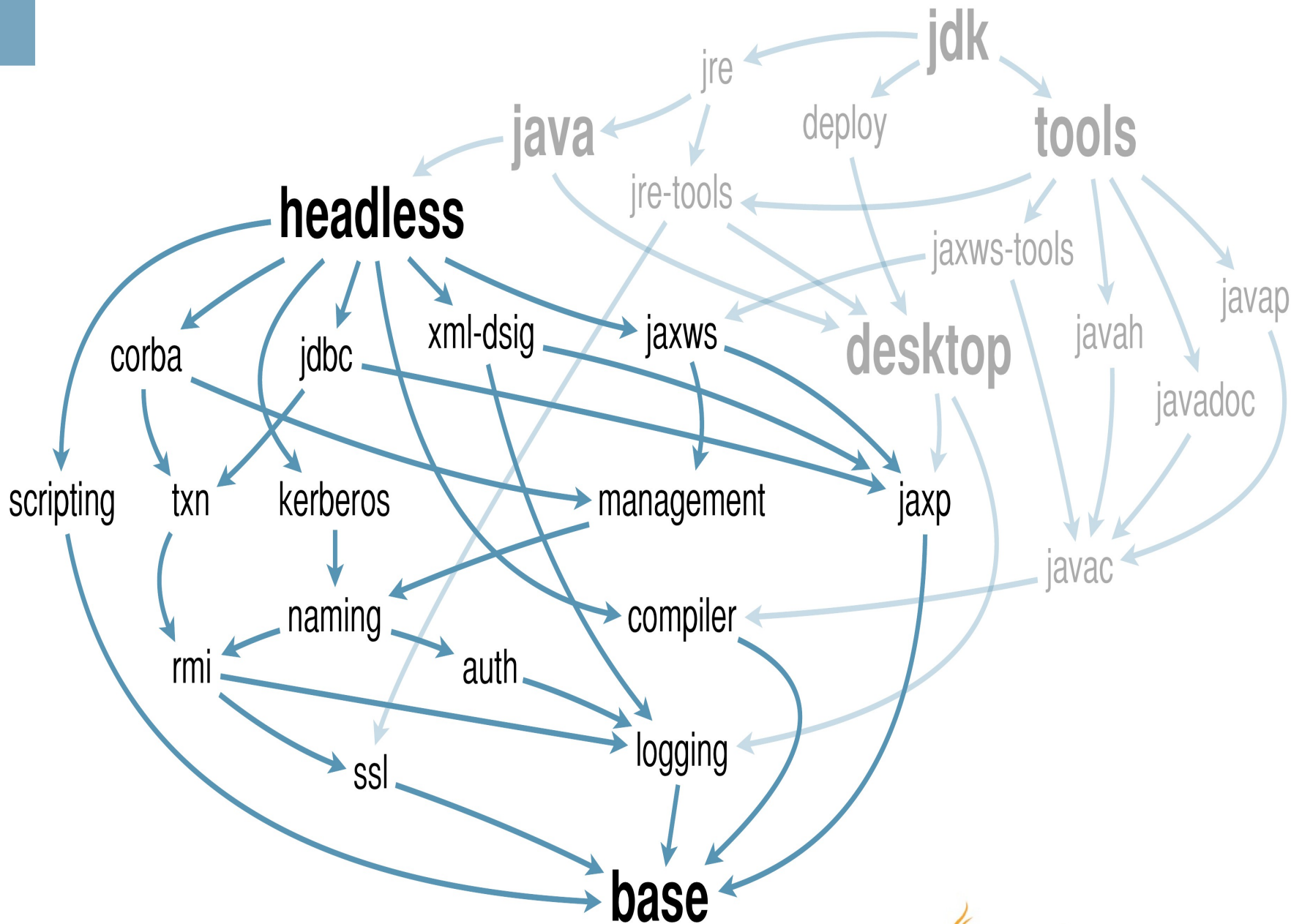


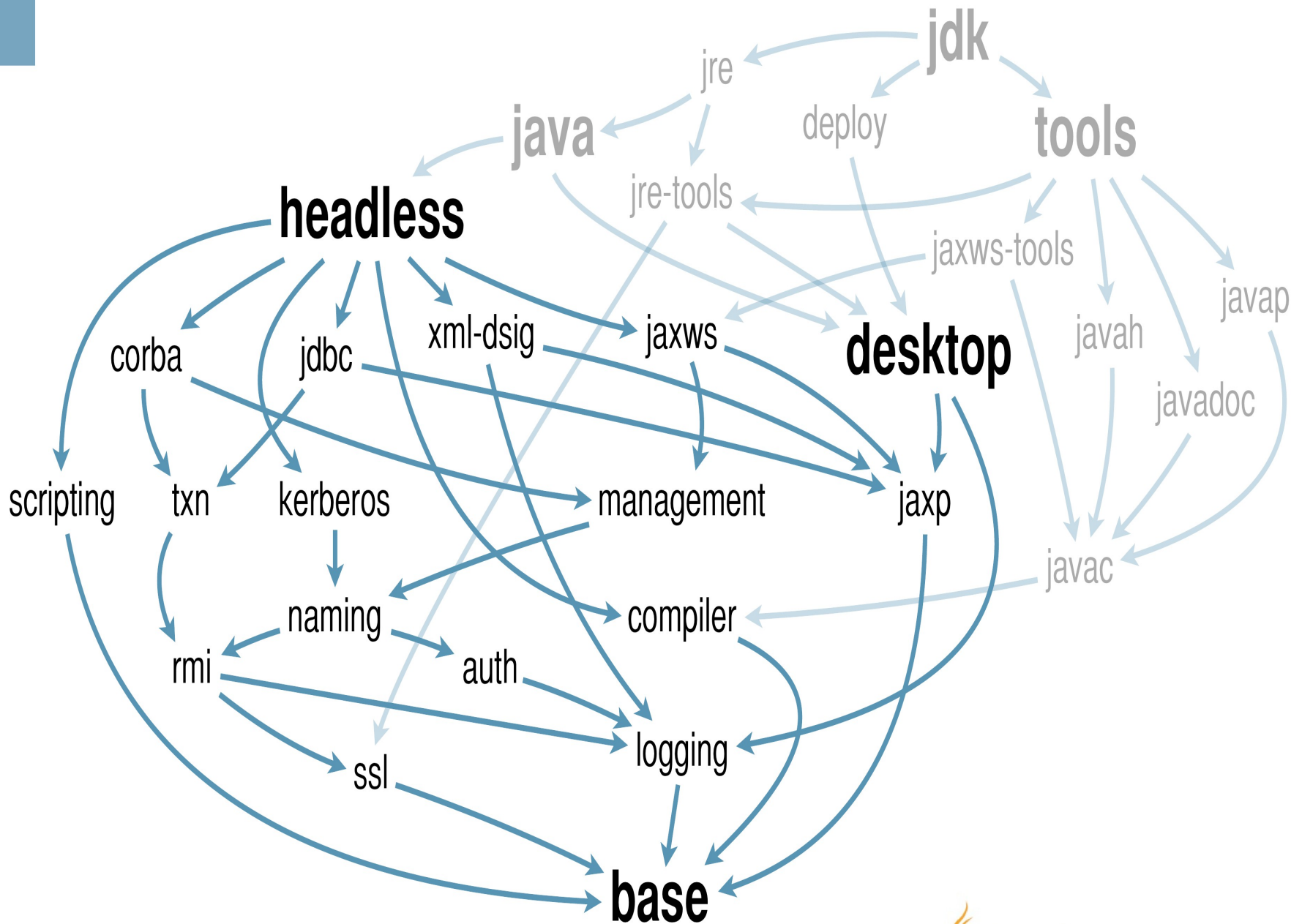
Project Jigsaw. History

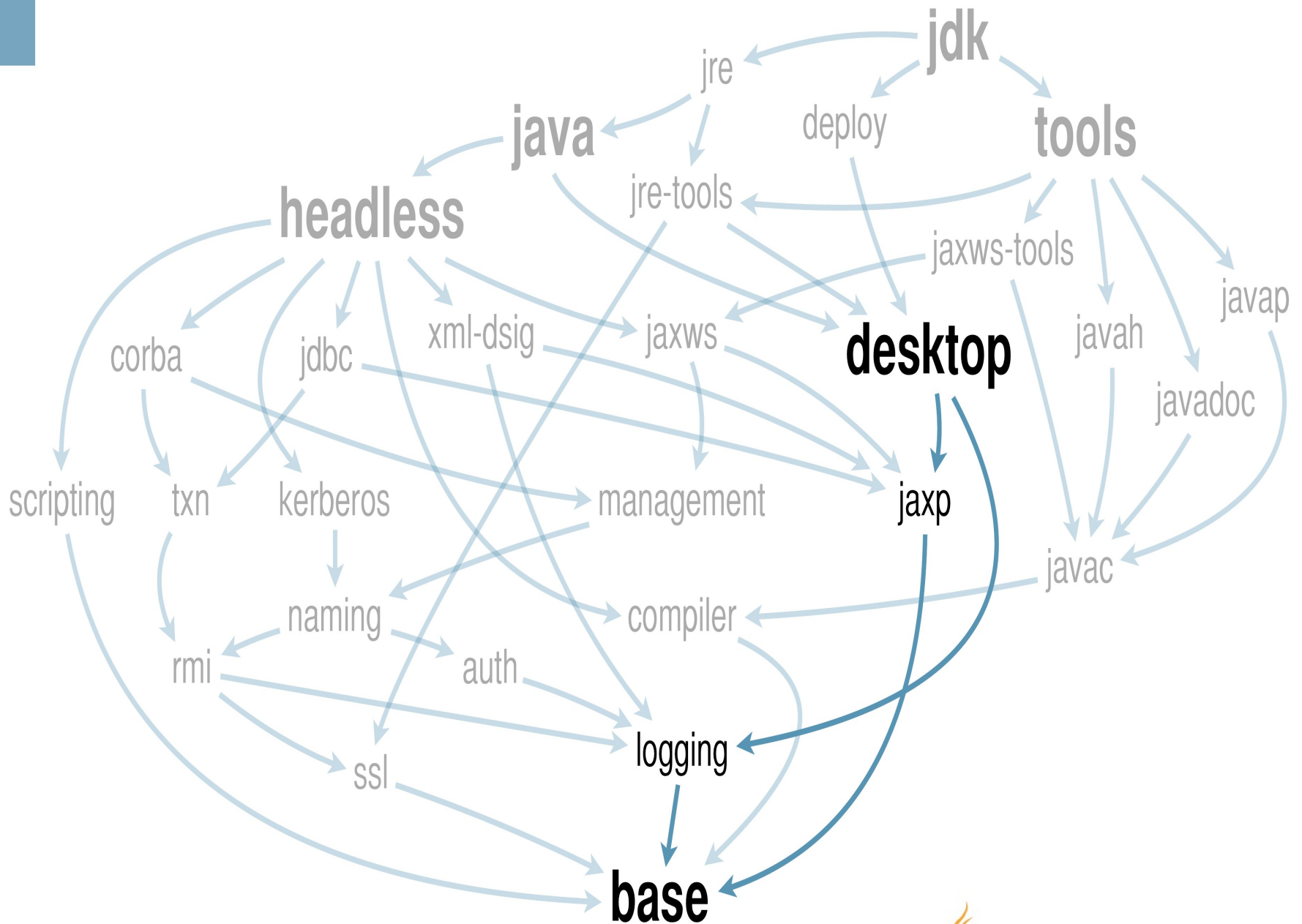
- Started in 2008
- Fully stuffed inly around the time JDK 7 GA
- Planned for JDK 8
- Pushed to JDK 9
- Light version (profiles) in JDK 8
- 9/2013. Take 2

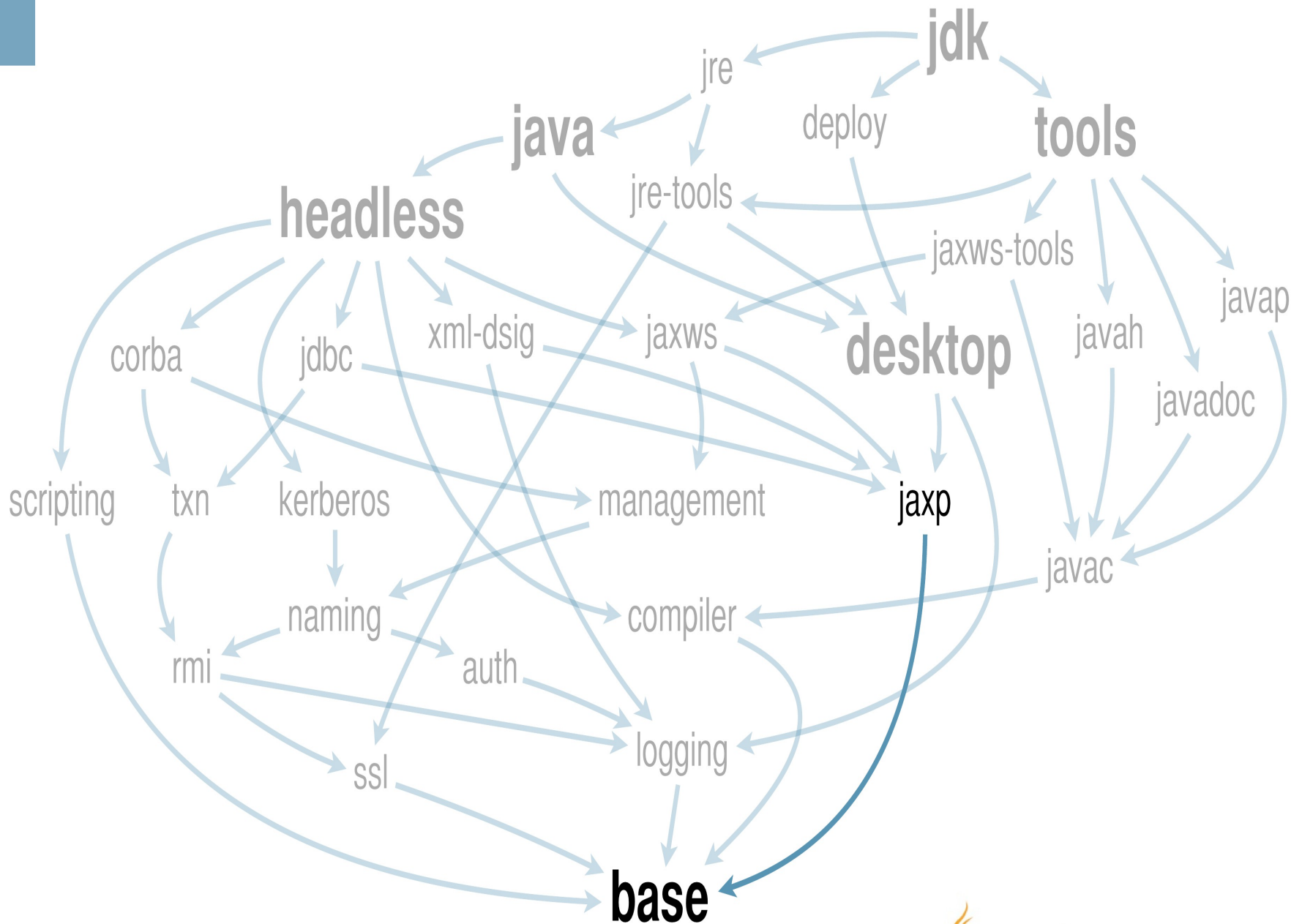
Scalability
Performance
Security

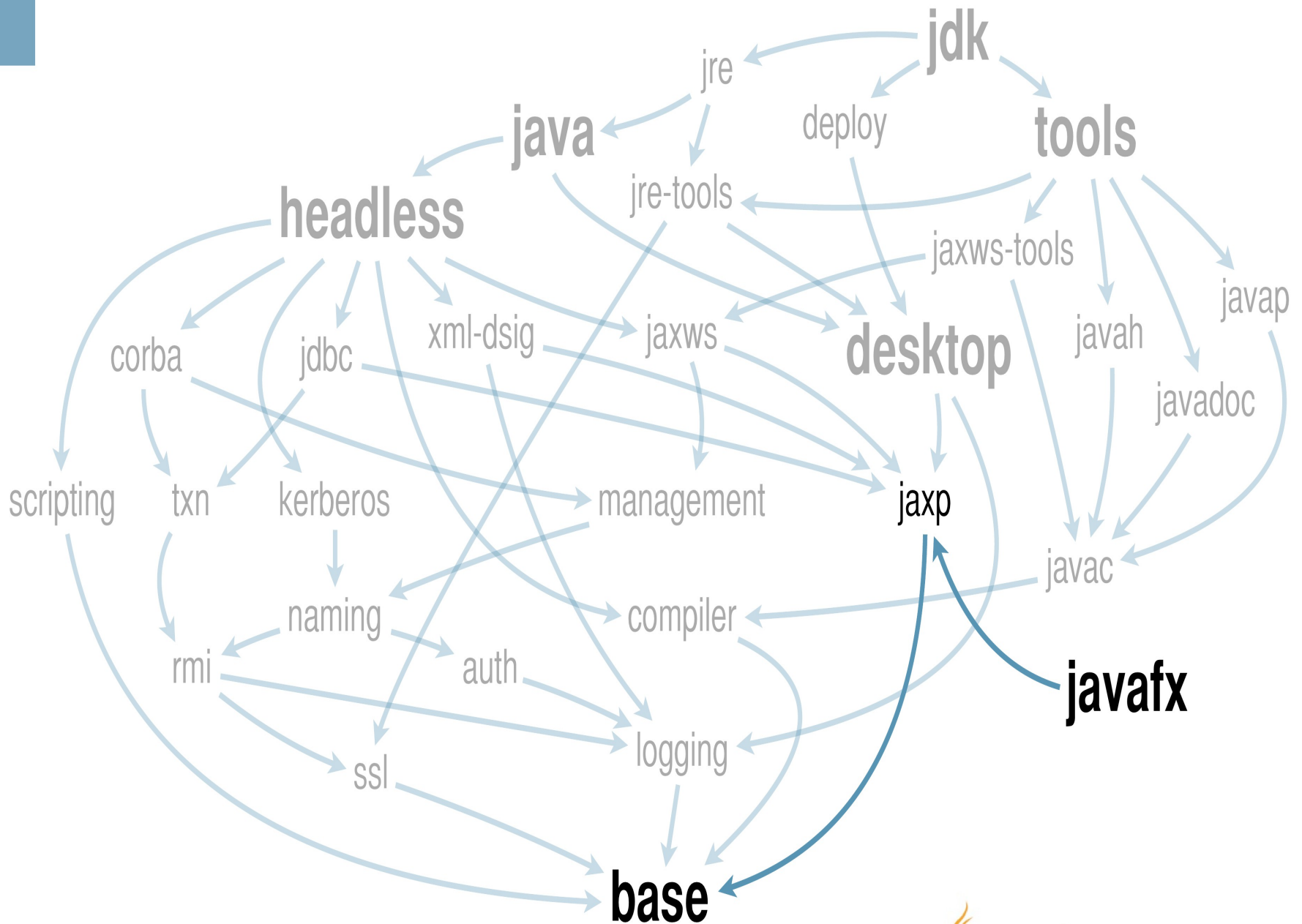


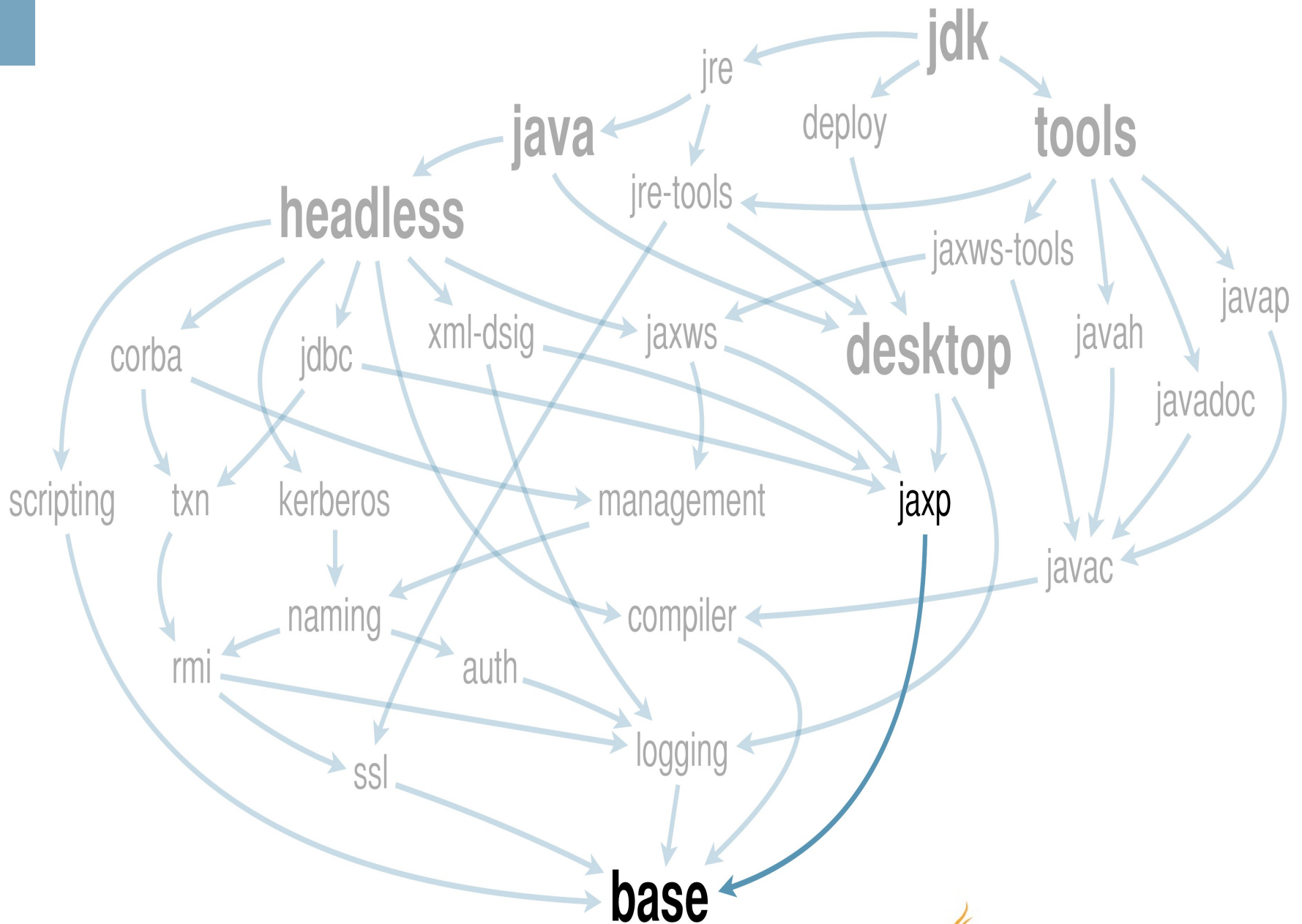


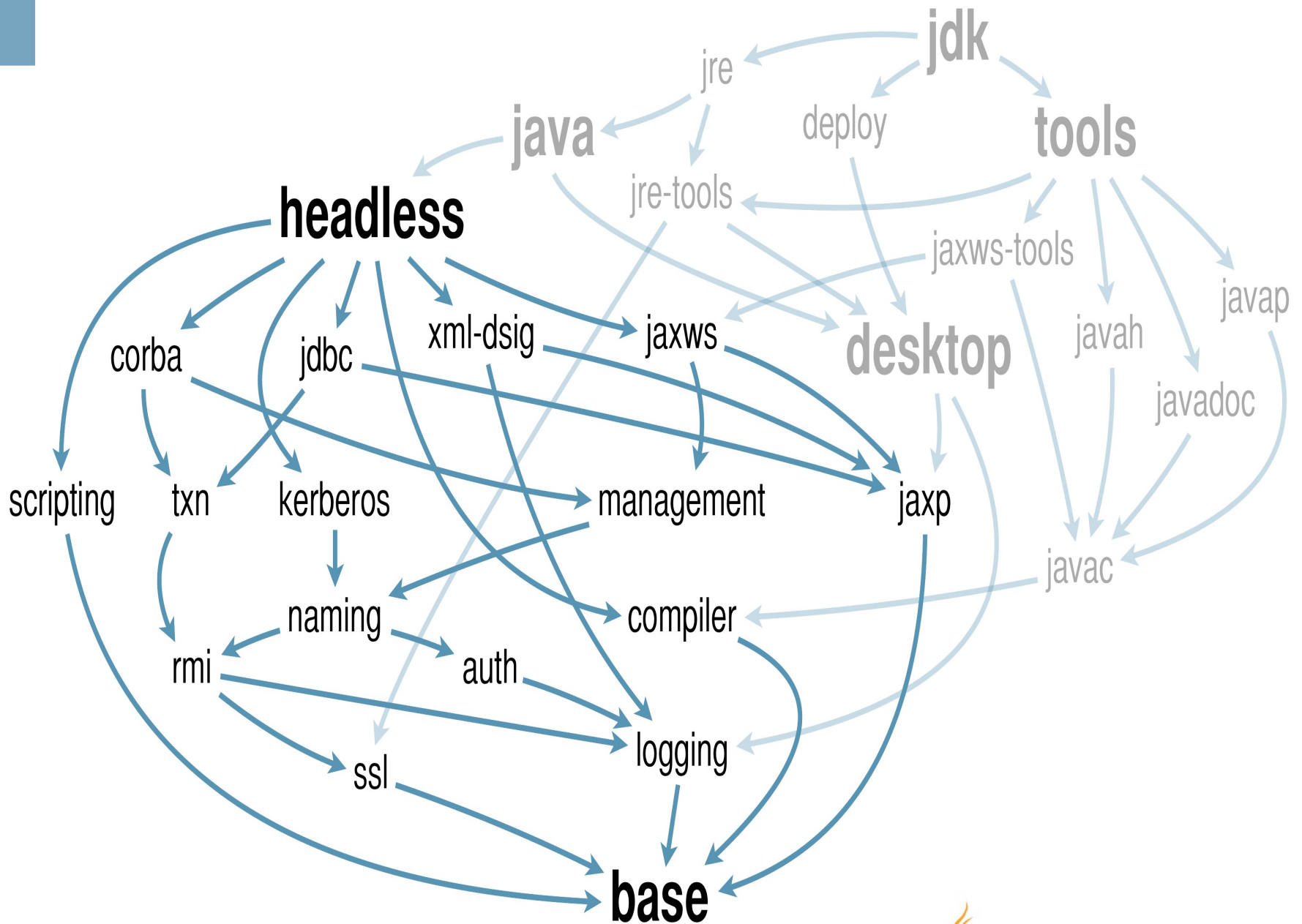


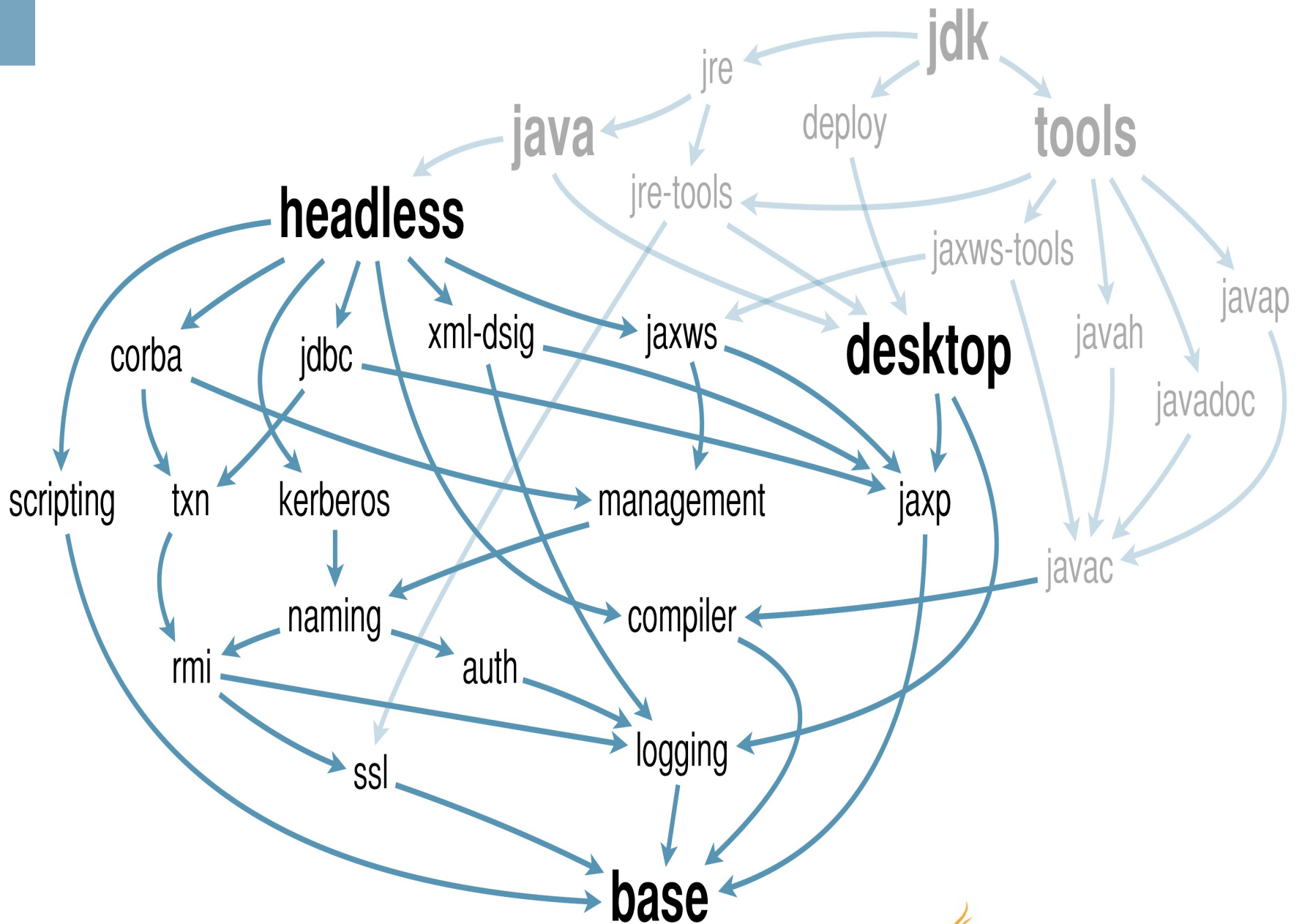


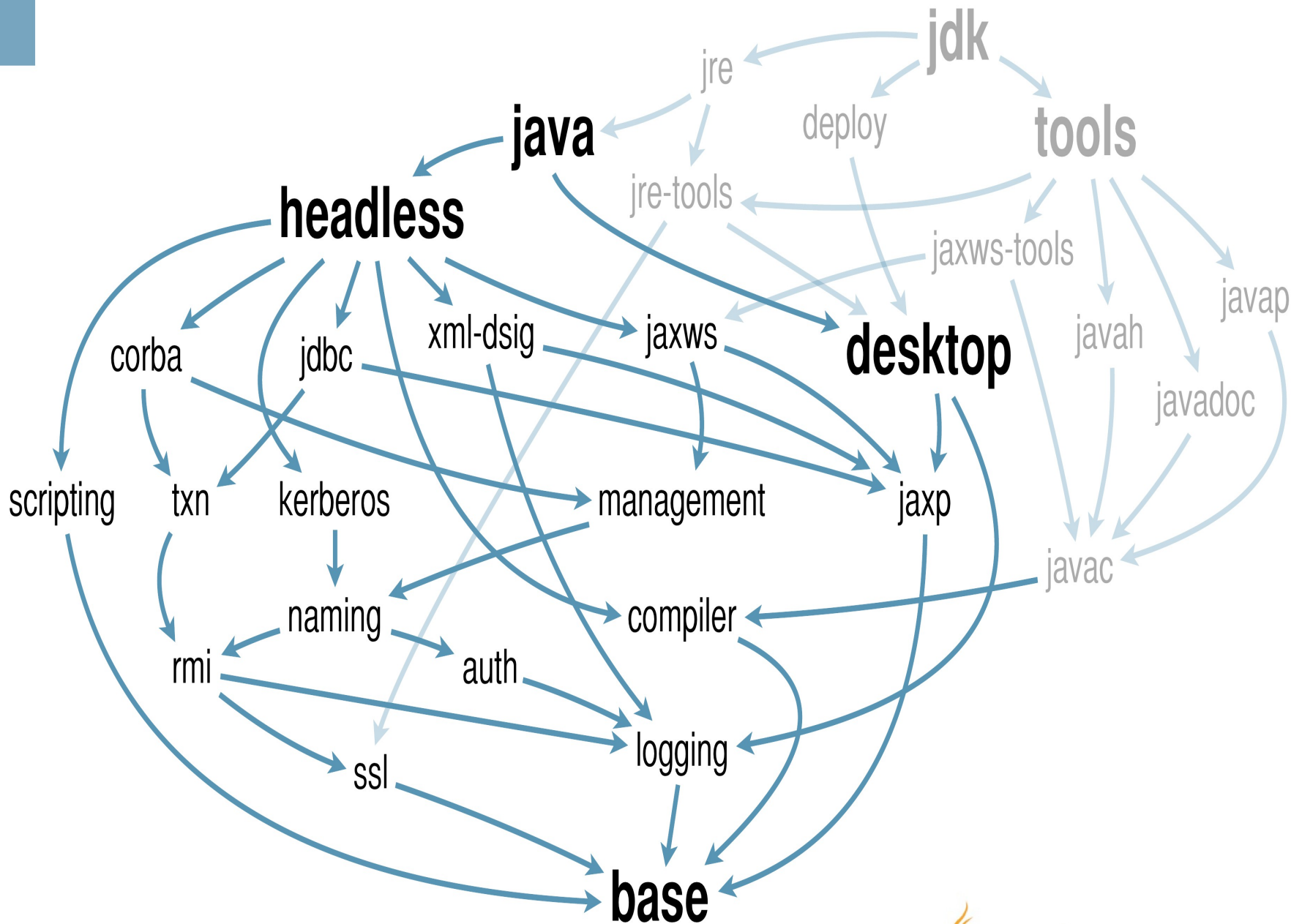


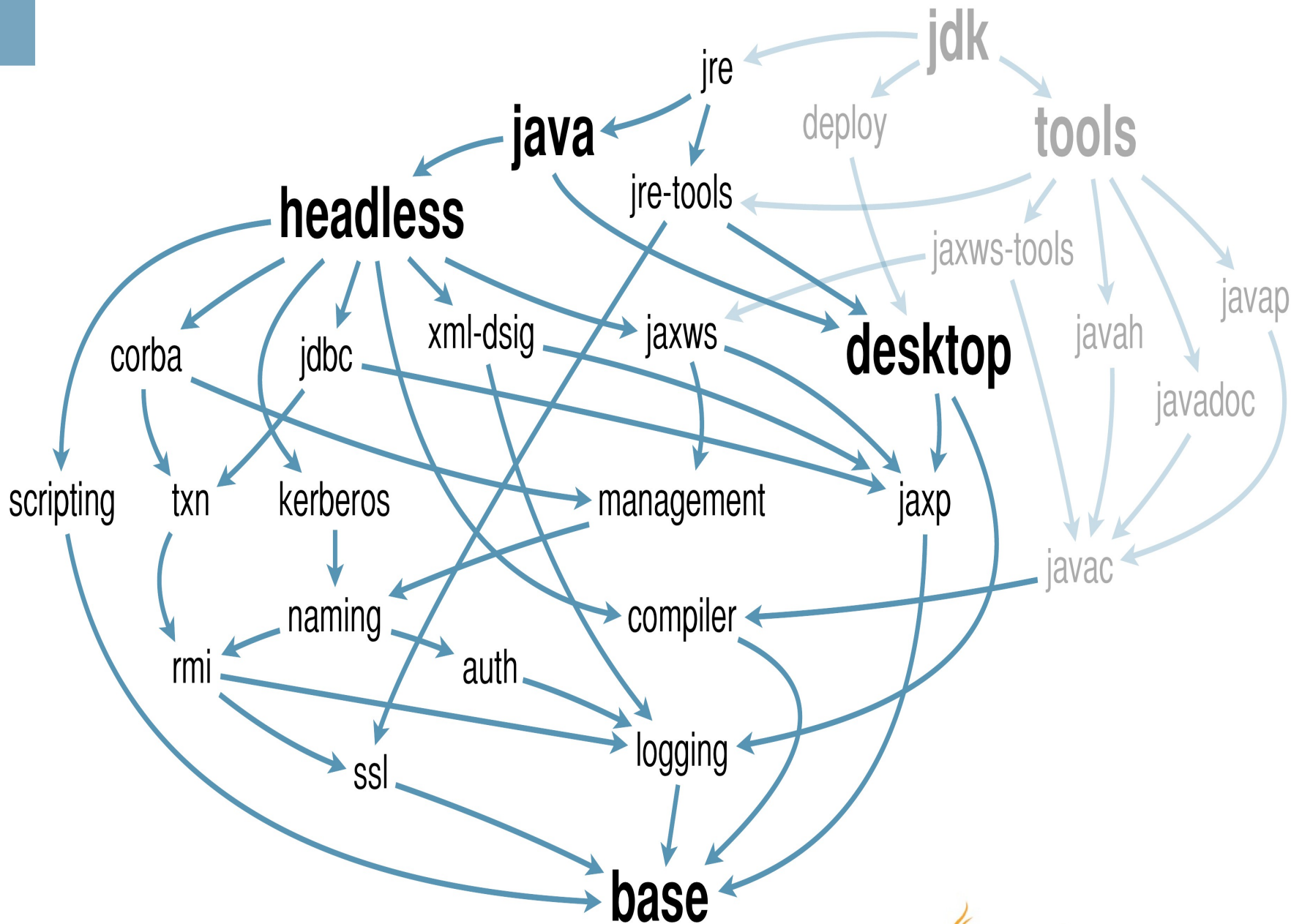


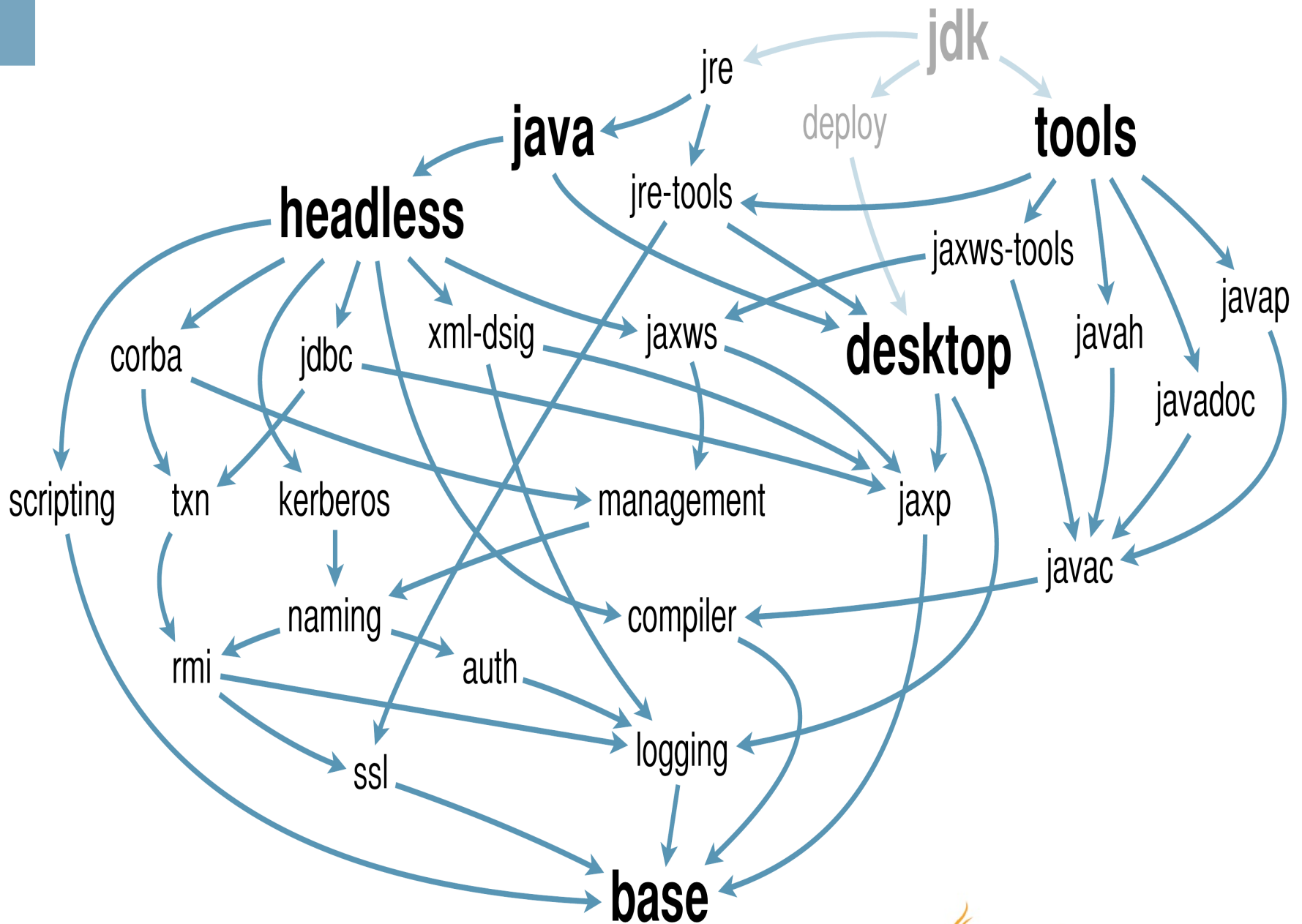


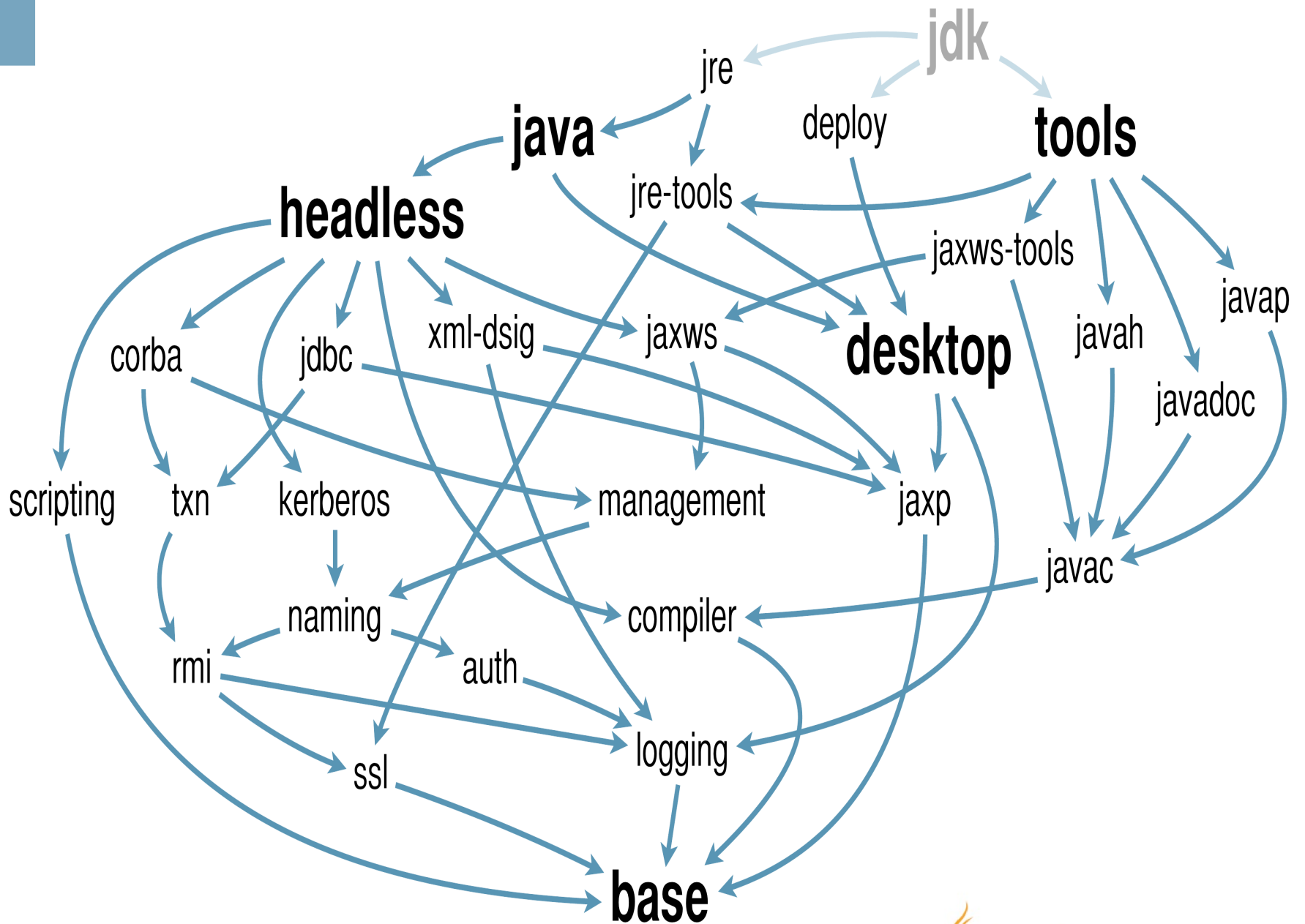


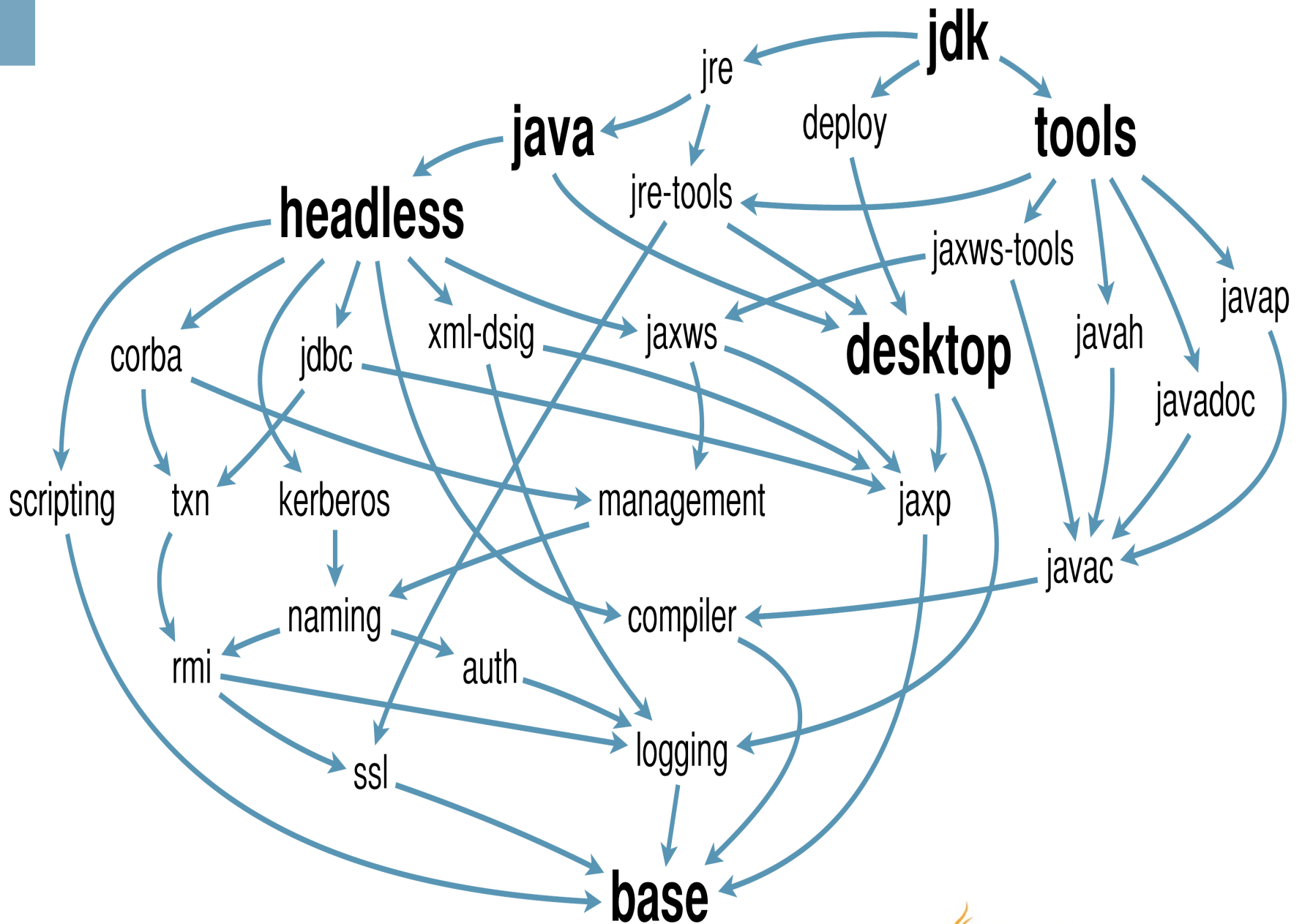












JDK 8 profiles

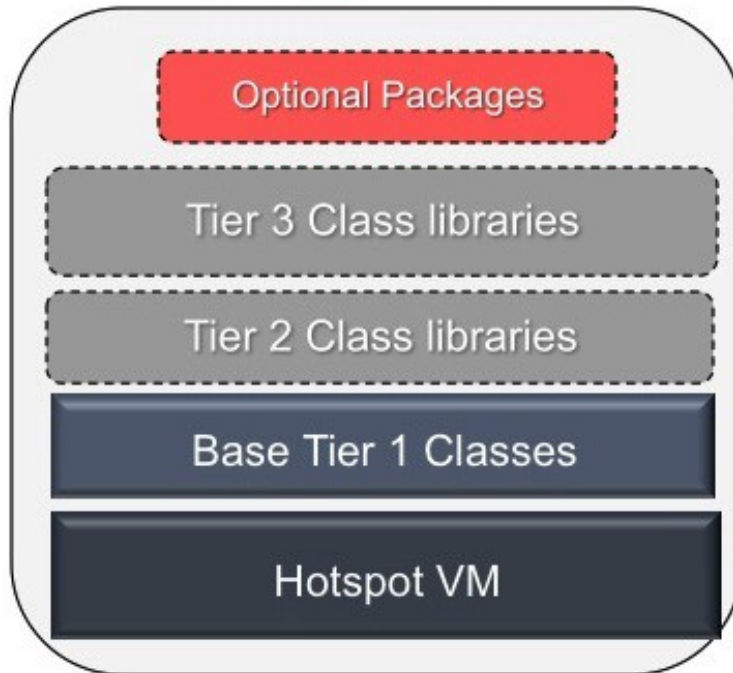
SE-E Compact Profiles

Profile

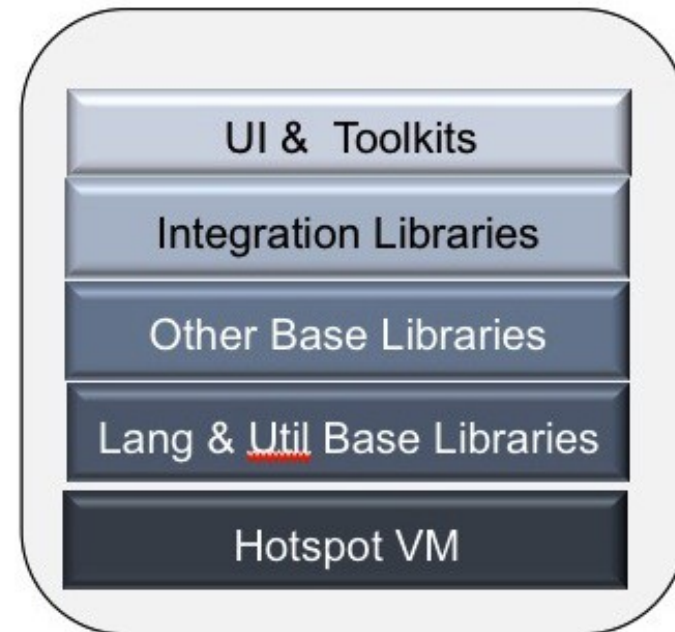
3

2

1



SE-E Complete



JDK 8 profiles

Optional Components

- FX Embedded
- Fonts
- I18N
- Optional Security Providers
- Debugging

Full JRE

Headful Capable

jdk.management, jdk.indi, jdk.idbc.rowset, jdk.kerberos, jdk.snmp,
jdk.scripting, jdk.xmldsig, jdk.prefs, jdk.sctp*, jdk.compiler,
jdk.smartcardio, jdk.auth, jdk.security.acl, jdk.instrument

jdk.idbc, jdk.iarp, jdk.rmi, jdk.ita, jdk.httpserver*

jdk.base, jdk.logging, jdk.tls

Minimal VM for Tier 1 or 2

Client or Server for Any Tier

Current
Jigsaw
X86 Sizes

Tier 4
49,944K

Tier 3
25,198K

Tier 2
19,478K

Tier 1
12,486K

jlink tool

```
$ jlink --output desktop_jre --mods  
jdk.desktop
```

- Takes modules, classes, jars
- Builds jai, jar, module

```
$ javac --mods  
javafx, jdk.rmi, jdk.nashorn ...
```

```
$ java --mods ...
```

JDK distribution

- rt.jar, tools.jar go away
- Possible layout:
 - bin
 - ext
 - include
 - lib
 - \$ARCH/*.so
 - modules

Jigsaw. Take 2. Performance

- Faster classloading
- Aggressive inlining
- AOT compilation
- Specific memory management
- Removing unused class members

Jigsaw. Security

- Much of java API is java.* and javax.* mostly
- No way to protect
- Everything is public
- `SecurityManager.checkPackageAccess(String)`
- Need something stronger

Dependency graph

- Module “provides” packages

Jigsaw. Security

- Dependency graph
- Module “provides” packages
- Internal packages go away: sun.*, com.*
- Well, ... not everything
- Most go away

jdeps tool

```
$ .../bin/jdeps .../DC.jar  
.../DC.jar -> .../jre/lib/rt.jar
```

```
asm (DC.jar)
```

```
-> java.io  
-> java.lang  
-> java.lang.invoke  
-> java.net  
-> java.nio.file  
-> java.nio.file.attribute  
-> java.util  
-> java.util.function  
-> java.util.jar  
-> java.util.stream  
-> java.util.zip  
-> jdk.internal.org.objectweb.asm  
-> jdk.internal.org.objectweb.asm.tree
```

```
JDK internal API (rt.jar)  
JDK internal API (rt.jar)
```

```
asm.trace (DC.jar)
```

```
-> java.io  
-> java.lang  
-> java.lang.reflect  
-> jdk.internal.org.objectweb.asm
```

```
JDK internal API (rt.jar)
```

Resources

<http://hg.openjdk.java.net/jigsaw/jake>

jigsaw-dev@openjdk.java.net

<http://habrahabr.ru/company/codefreeze/blog/193086>



Jigsaw. Take 2. Status update.

Alexandre (БІРКФ) Іline
Java Test Architect

