
JavaOne™
JavaOne 2012
Technical Keynote
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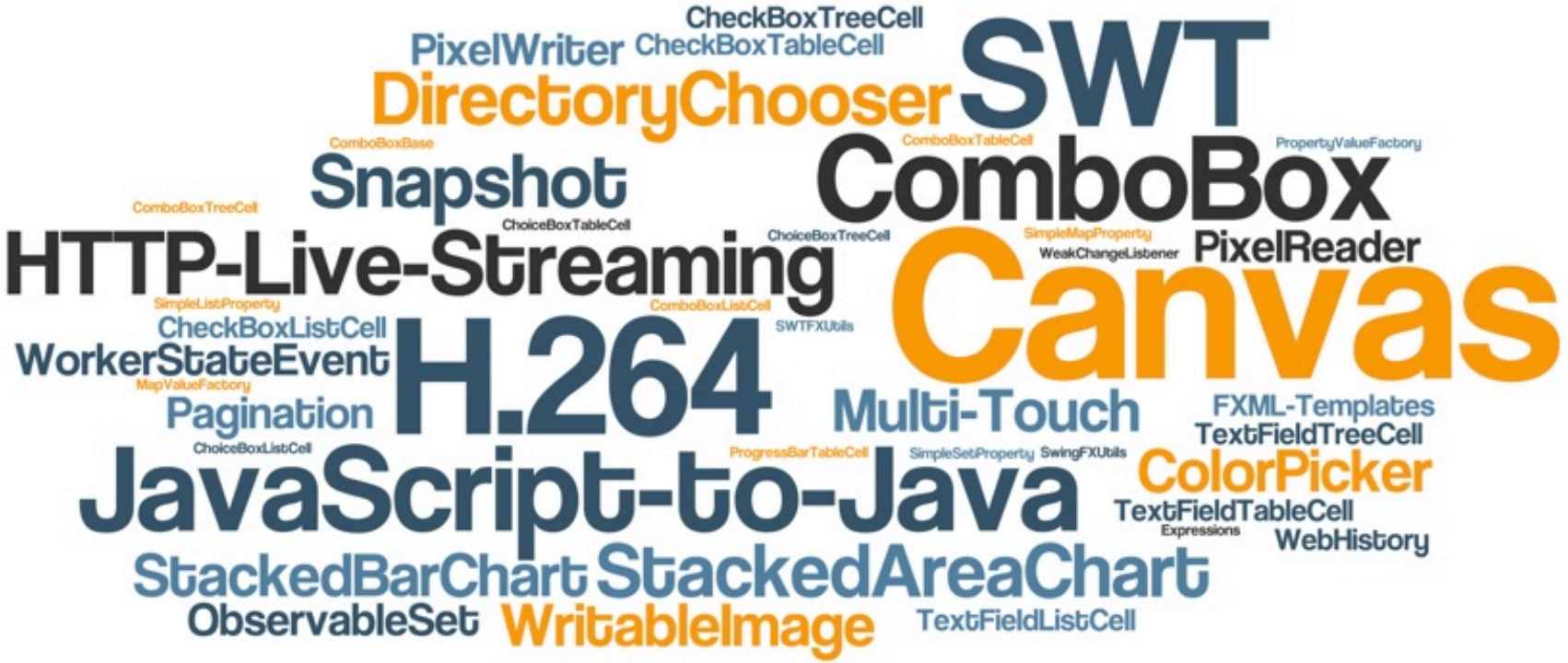
Chief Architect, Java Platform Group
MAKE THE
FUTURE
JAVA
ORACLE

Richard Bair
Chief Architect, Java Client Group

Jasper Potts
Developer Experience Architect




```
final SessionFilterCriteria criteria = sessionFilter;
final List<Row> allRows = new ArrayList<Row>(rows);
allRows.addAll(filtered);

filterTask = new Task<Runnable>() {
    @Override protected Runnable call() throws Exception {
        /*...*/
    }
};

filterTask.setOnSucceeded(new EventHandler<WorkerStateEvent>() {
    @Override public void handle(WorkerStateEvent event) {
        final Runnable r = filterTask.getValue();
        if (r != null) r.run();
    }
});

FILTER_EXECUTOR.submit(filterTask);
```



```
// A map of sessions which need to move from being filtered
// to being unfiltered
final Map<Row, List<SessionView>> sessionsToRestore
    = new HashMap<Row, List<SessionView>>();

// A map of sessions which need to move to being filtered
final Map<Row, List<SessionView>> sessionsToFilter
    = new HashMap<Row, List<SessionView>>();
```

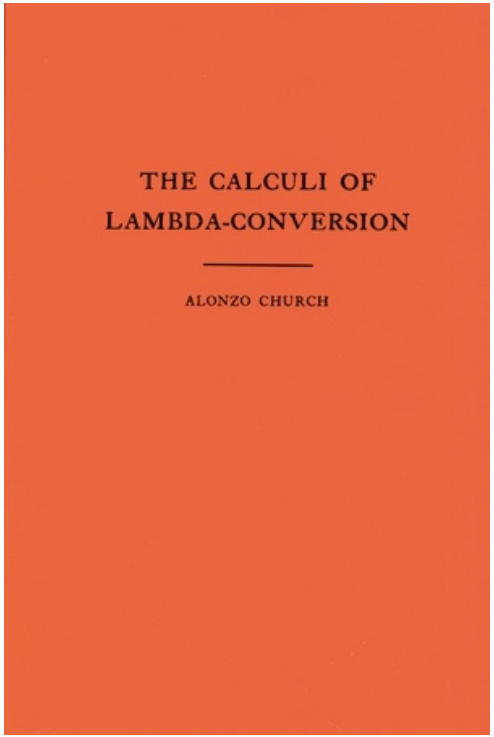
```
private boolean shouldKeep(Session s, SessionCriteria criteria) {
    final String text = criteria.getText();
    final Set<Track> tracks = criteria.getTracks();
    final Set<SessionType> types = criteria.getSessionTypes();

    return (s.getTitle().toLowerCase().contains(text) ||
        s.getSpeakersDisplay().toLowerCase().contains(text) ||
        s.getSummary().toLowerCase().contains(text) ||
        s.getAbbreviation().toLowerCase().contains(text)) &&
        (!(t != null && tracks.contains(t)) &&
        !(st != null && types.contains(st)));
}
```

```
for (Row row : allRows) {
    for (SessionView view : row.sessions) {
        if (isCancelled()) return null;
        if (view.filtered.get() && shouldKeep(view.session, criteria)) {
            List<SessionView> views = sessionsToRestore.get(row);
            if (views == null) {
                views = new ArrayList<SessionView>();
                sessionsToRestore.put(row, views);
            }
            views.add(view);
        } else if (!view.filtered.get() && !shouldKeep(view.session, criteria)) {
            List<SessionView> views = sessionsToRestore.get(row);
            if (views == null) {
                views = new ArrayList<SessionView>();
                sessionsToFilter.put(row, views);
            }
            views.add(view);
        }
    }
}
```


Brian Goetz

Java Language Architect




```
// Event handler for when things go terribly wrong
filterTask.setOnFailed(new EventHandler<WorkerStateEvent>() {
    @Override public void handle(WorkerStateEvent e) {
        e.getSource().getException().printStackTrace();
    }
});
```



```
// Event handler for when things go terribly wrong
filterTask.setOnFailed(new EventHandler<WorkerStateEvent>() {
    @Override public void handle(WorkerStateEvent e) {
        e.getSource().getException().printStackTrace();
    }
});
```

```
filterTask.setOnFailed(
   e -> e.getSource().getException().printStackTrace());
```



```
for (Shape s : shapes) {
    if (s.getColor() == BLUE)
        s.setColor(RED);
}
```

```
for (Shape s : shapes) {
    if (s.getColor() == BLUE)
        s.setColor(RED);
}
```

```
shapes.forEach(s -> {
    if (s.getColor() == BLUE)
        s.setColor(RED);
});
```



```
interface Collection<T> {
    default void forEach(Block<T> action) {
        for (T t : this)
            action.apply(t);
    }
}
```



```
shapes.forEach(s -> {
    if (s.getColor() == BLUE)
        s.setColor(RED);
});
```

```
shapes.forEach(s -> {
    if (s.getColor() == BLUE)
        s.setColor(RED);
});

shapes.filter(s -> s.getColor() == RED)
      .forEach(s -> { s.setColor(BLUE); });
```



```
int sumOfWeight = shapes.parallel()
                        .filter(s -> s.getColor() == BLUE)
                        .map(s -> s.getWeight())
                        .sum();
```



```
for (Row row : allRows) {
    for (SessionView view : row.sessions) {
        if (isCancelled()) return null;
        if (view.filtered.get() && shouldKeep(view.session, criteria)) {
            List<SessionView> views = sessionsToRestore.get(row);
            if (views == null) {
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                sessionsToRestore.put(row, views);
            }
            views.add(view);
        } else if (!view.filtered.get() && !shouldKeep(view.session, criteria)) {
            List<SessionView> views = sessionsToRestore.get(row);
            if (views == null) {
                views = new ArrayList<SessionView>();
                sessionsToFilter.put(row, views);
            }
            views.add(view);
        }
    }
}
```



```
List<SessionView> views = sessionsToRestore.get(row);
if (views == null) {
    views = new ArrayList<SessionView>();
    sessionsToRestore.put(row, views);
}
views.add(view);
```

```
List<SessionView> views = sessionsToRestore.get(row);
if (views == null) {
    views = new ArrayList<SessionView>();
    sessionsToRestore.put(row, views);
}
views.add(view);
```

```
List<SessionView> views
    = sessionsToRestore.computeIfAbsent(row, () -> new ArrayList<>());
views.add(view);
```



```
List<SessionView> views = sessionsToRestore.get(row);
if (views == null) {
    views = new ArrayList<SessionView>();
    sessionsToRestore.put(row, views);
}
views.add(view);
```

```
List<SessionView> views
    = sessionsToRestore.computeIfAbsent(row, () -> new ArrayList<>());
views.add(view);
```

```
sessionsToRestore.computeIfAbsent(row, () -> new ArrayList<>())
                 .add(view);
```



```
for (Row row : allRows) {
    for (SessionView view : row.sessions) {
        if (isCancelled()) return null;
        if (view.filtered.get() && shouldKeep(view.session, criteria)) {
            List<SessionView> views = sessionsToRestore.get(row);
            if (views == null) {
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                sessionsToRestore.put(row, views);
            }
            views.add(view);
        } else if (!view.filtered.get() && !shouldKeep(view.session, criteria)) {
            List<SessionView> views = sessionsToRestore.get(row);
            if (views == null) {
                views = new ArrayList<SessionView>();
                sessionsToFilter.put(row, views);
            }
            views.add(view);
        }
    }
}
```



```
Factory<ArrayList<SessionView>> fact = () -> new ArrayList<>();
for (Row row : allRows) {
    row.sessions
       .filter(view -> view.filtered.get()
                       && shouldKeep(view.session, criteria))
       .forEach(view -> sessionsToRestore.computeIfAbsent(row, fact)
                                         .add(view));
    row.sessions
       .filter(view -> !view.filtered.get()
                       && !shouldKeep(view.session, criteria))
       .forEach(view -> sessionsToFilter.computeIfAbsent(row, fact)
                                        .add(view));
}
```

Project Lambda

http://openjdk.java.net/projects/lambda

http://jdk8.java.net/lambda

Project Lambda

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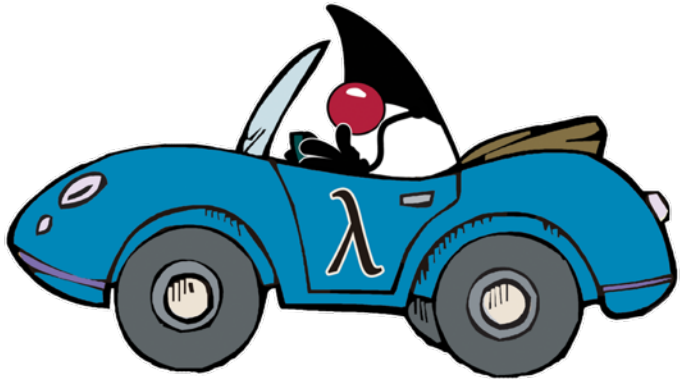
http://jdk8.java.net/lambda



Project Lambda

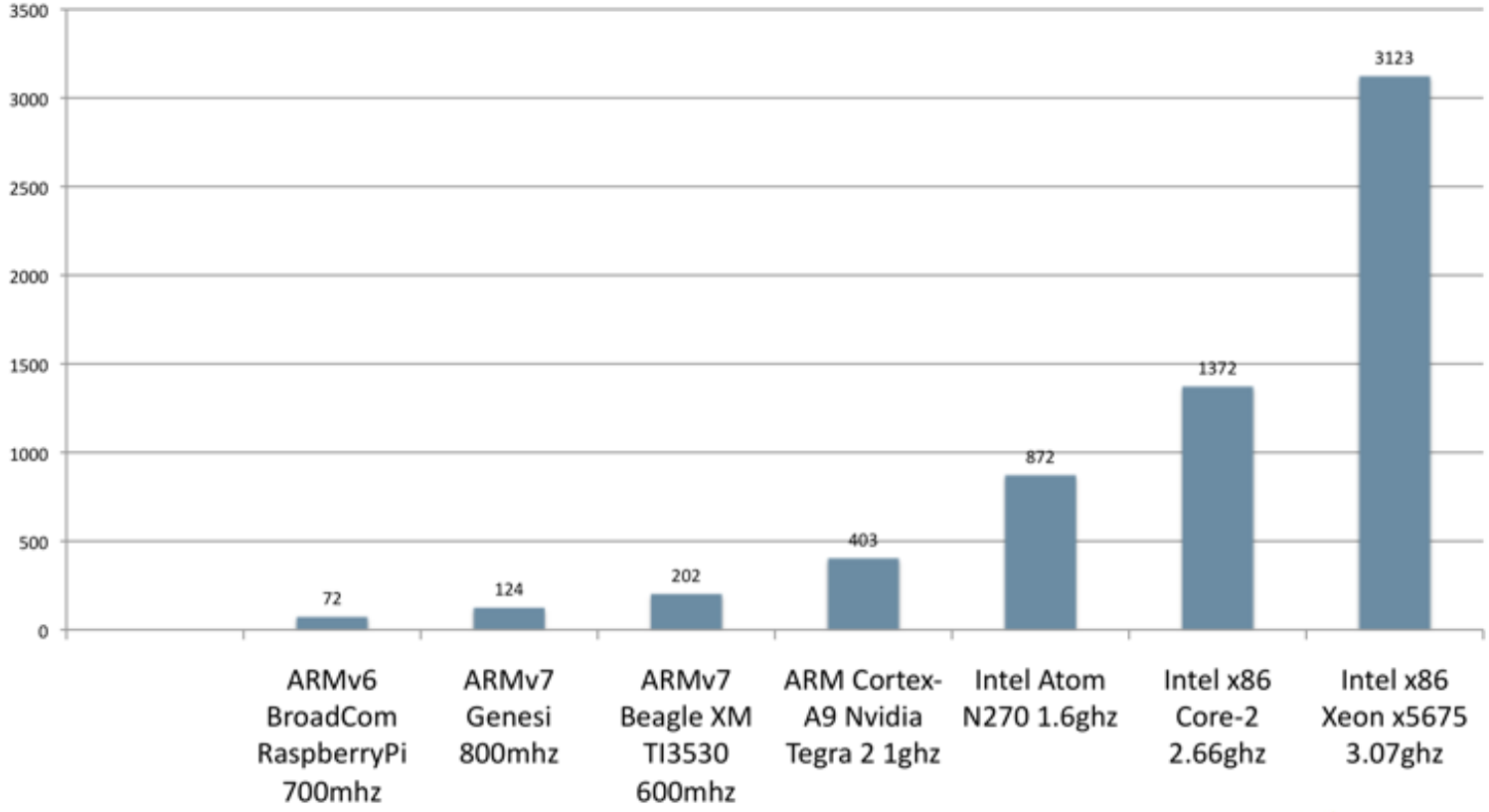
http://openjdk.java.net/projects/lambda

http://jdk8.java.net/lambda

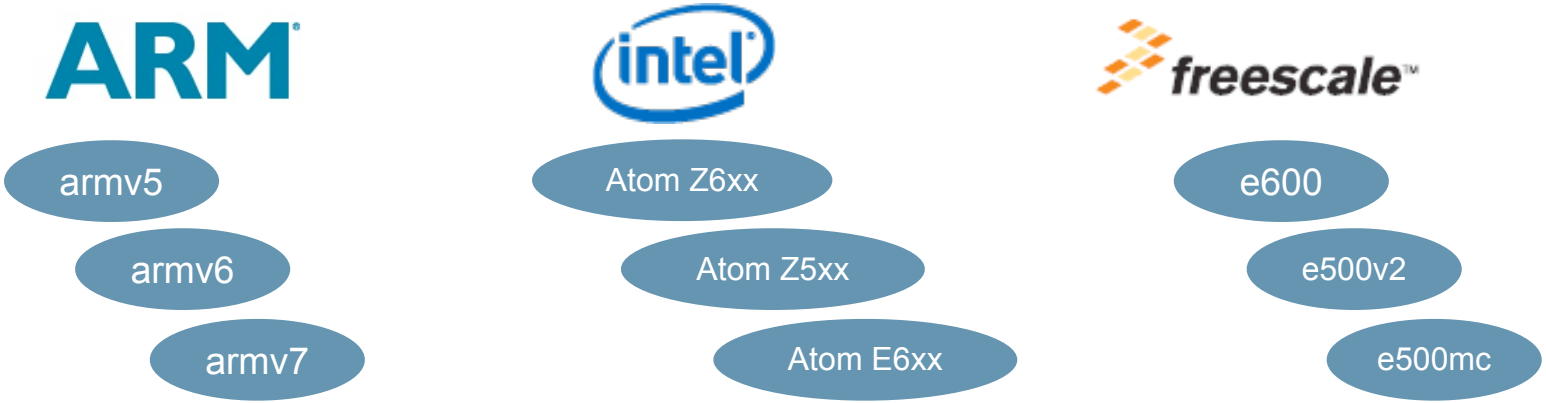
Bob Vandette

Java Embedded Architect

Memory Bandwidth Comparison



Variations in Embedded Architectures



ARM ABI
EABI,HFABI

Big/Little
Endian

Single
Multi-Core

32 vs. 64 bit

soft-float
hard-float

Memory
TSO,RMO

GPU

Software
Rendering

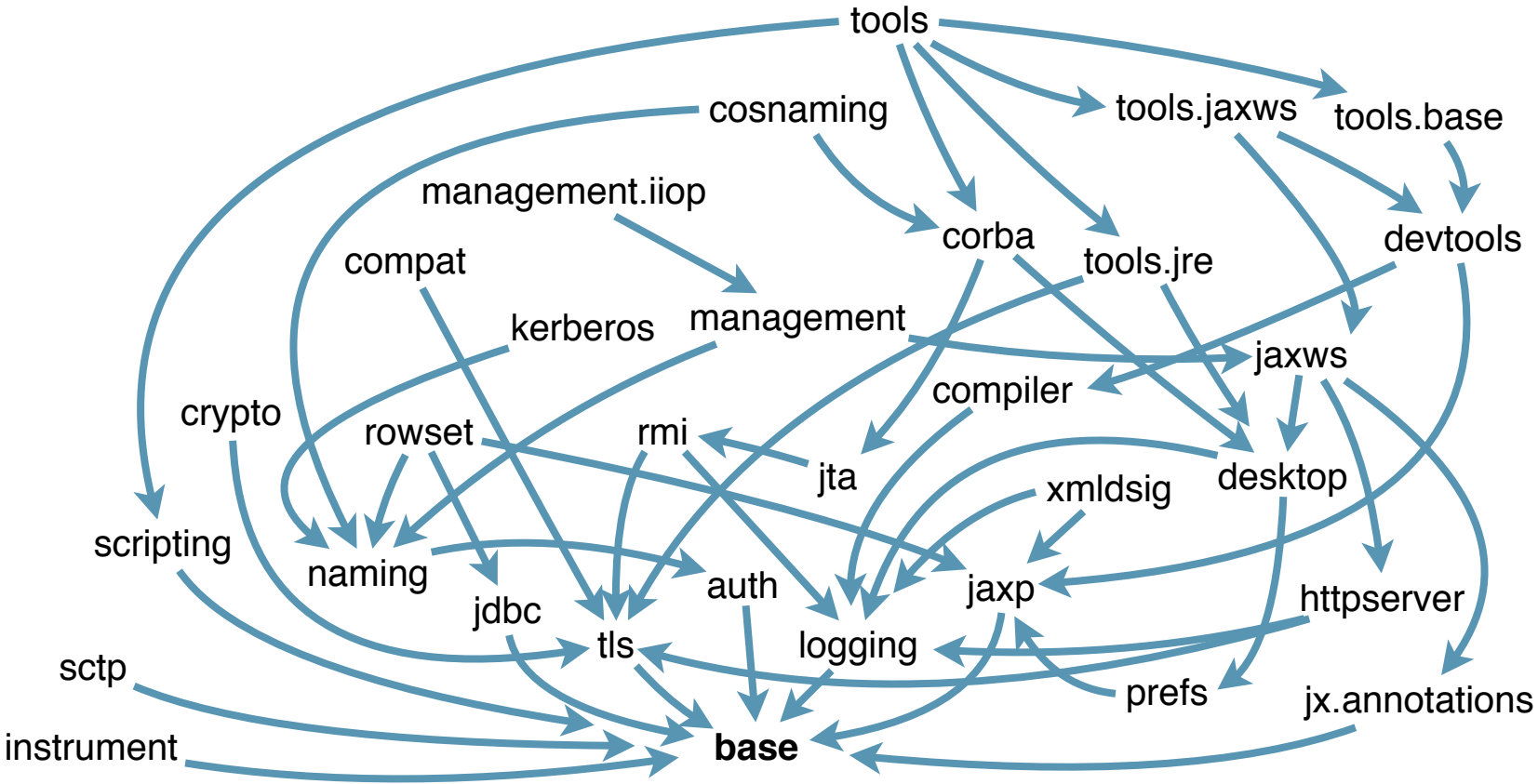
FPU

Footprint Metrics

	Current	
Graphics?	No	Yes
Static	43	52
Dynamic	32	64

Footprint Metrics

	Current		*Converged (goal)*	
Graphics?	No	Yes	No	Yes
Static	43	52	10	16
Dynamic	32	64	16	32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tools.jaxws
tools.base
management.iiop
corba
devtools
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tools.jre
kerberos
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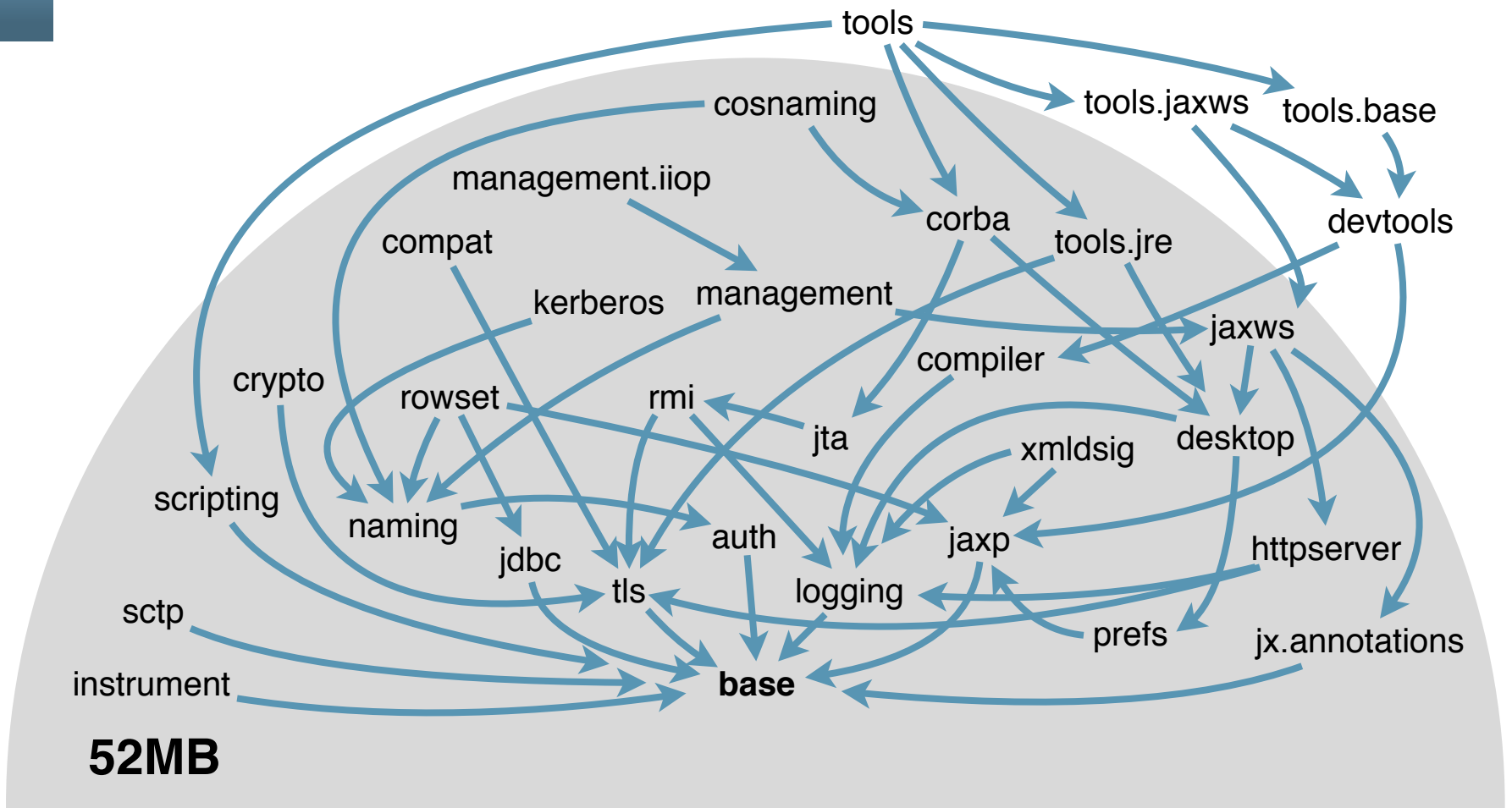
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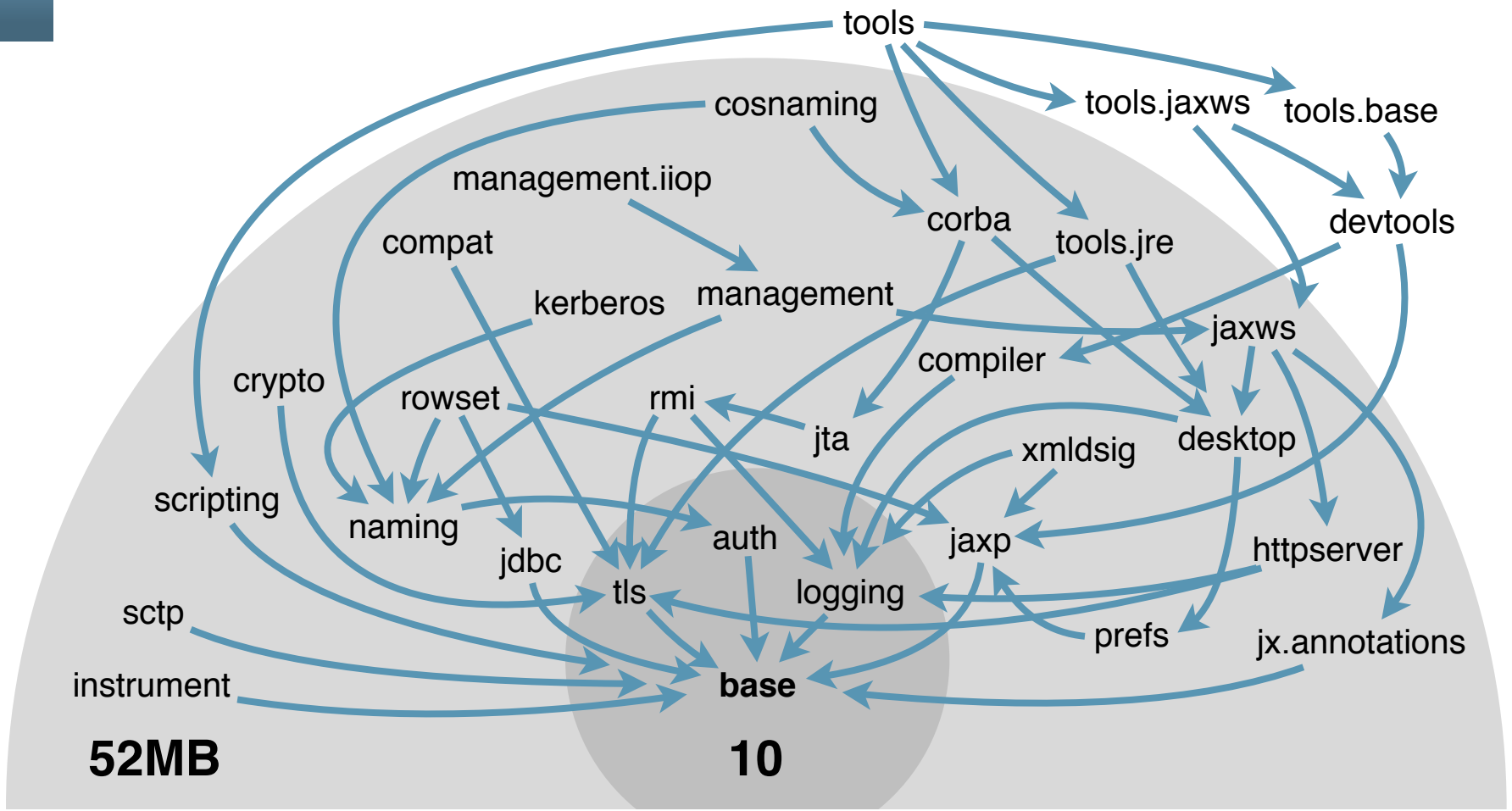
52MB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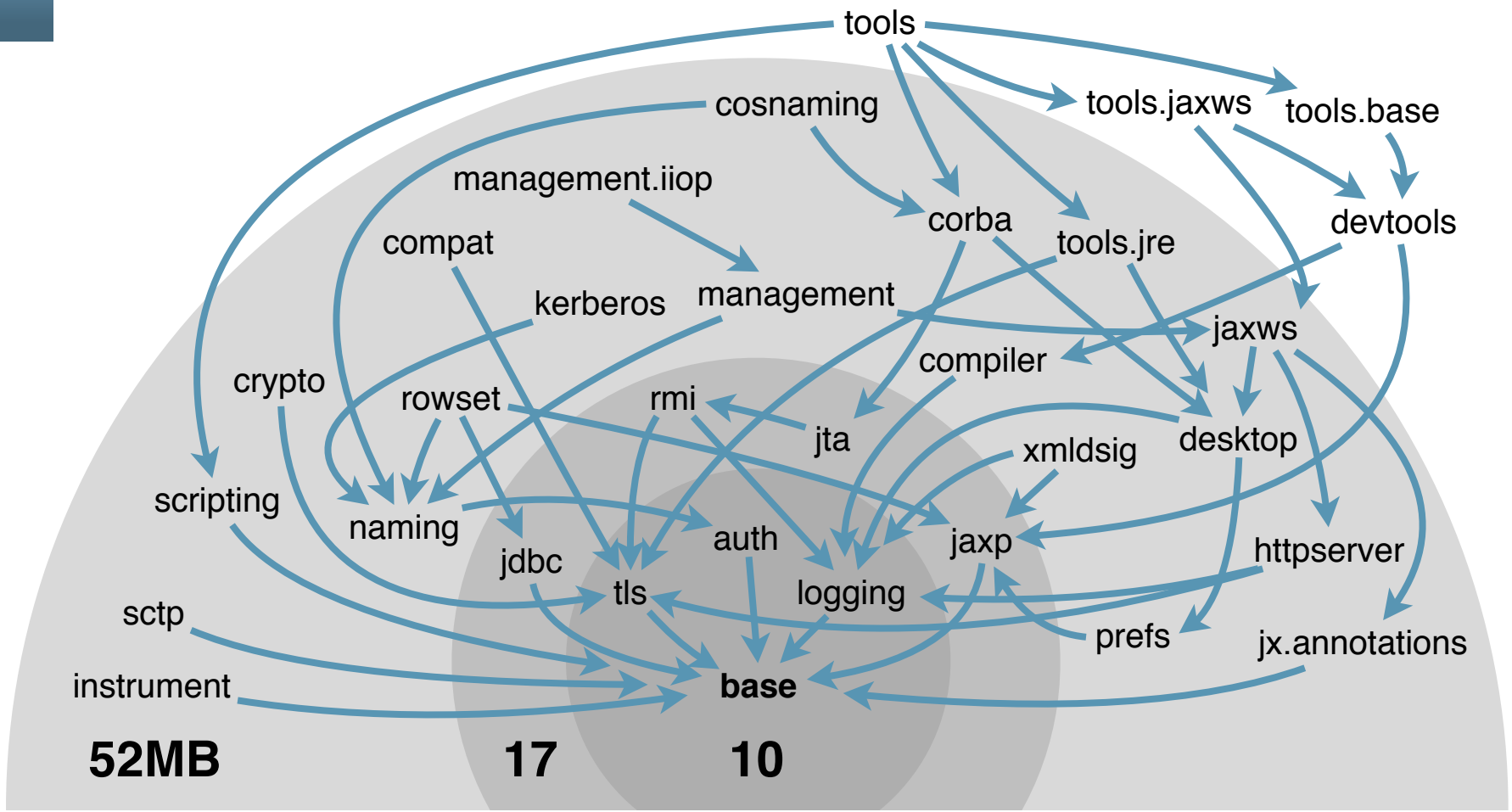
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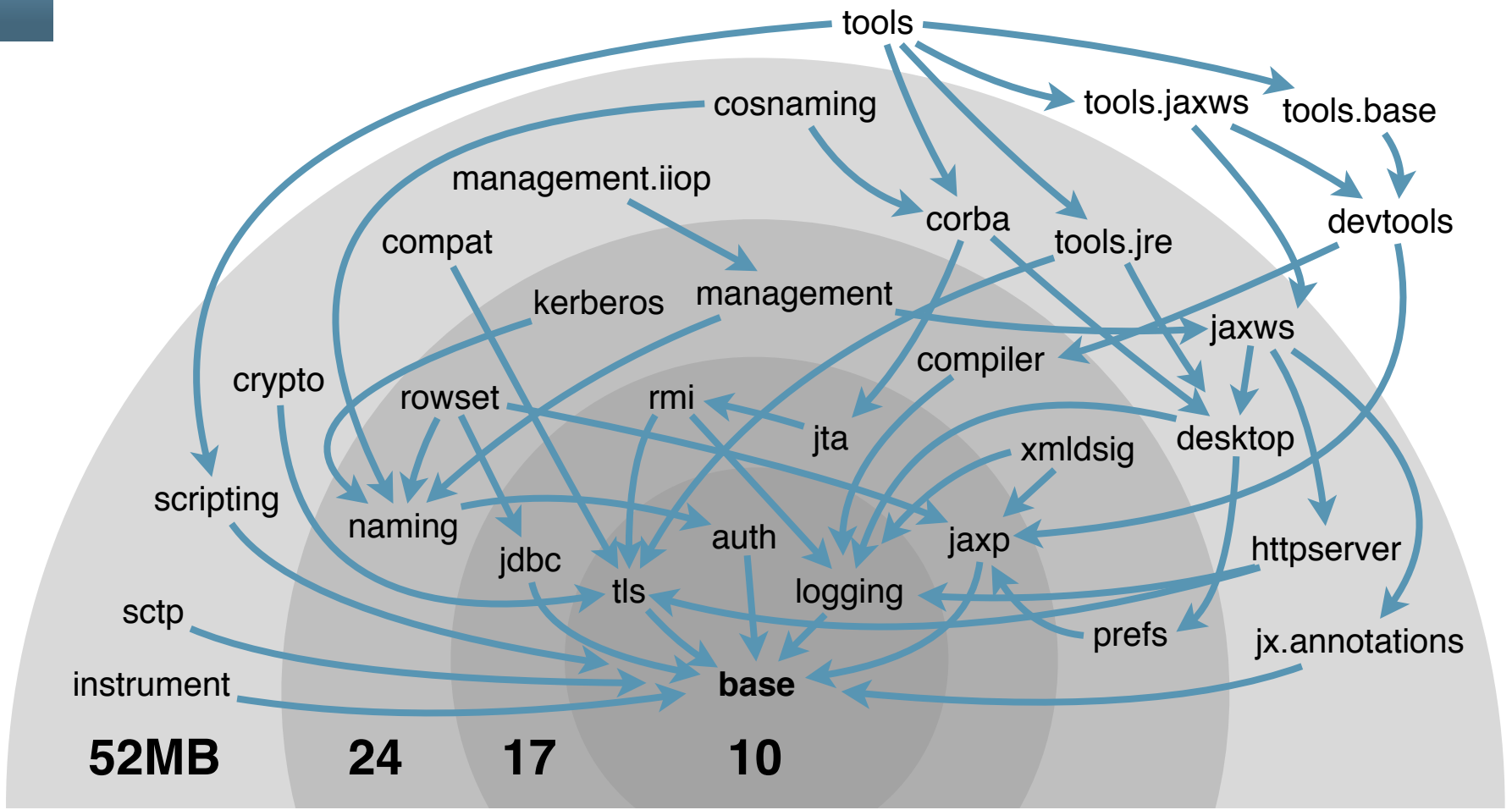
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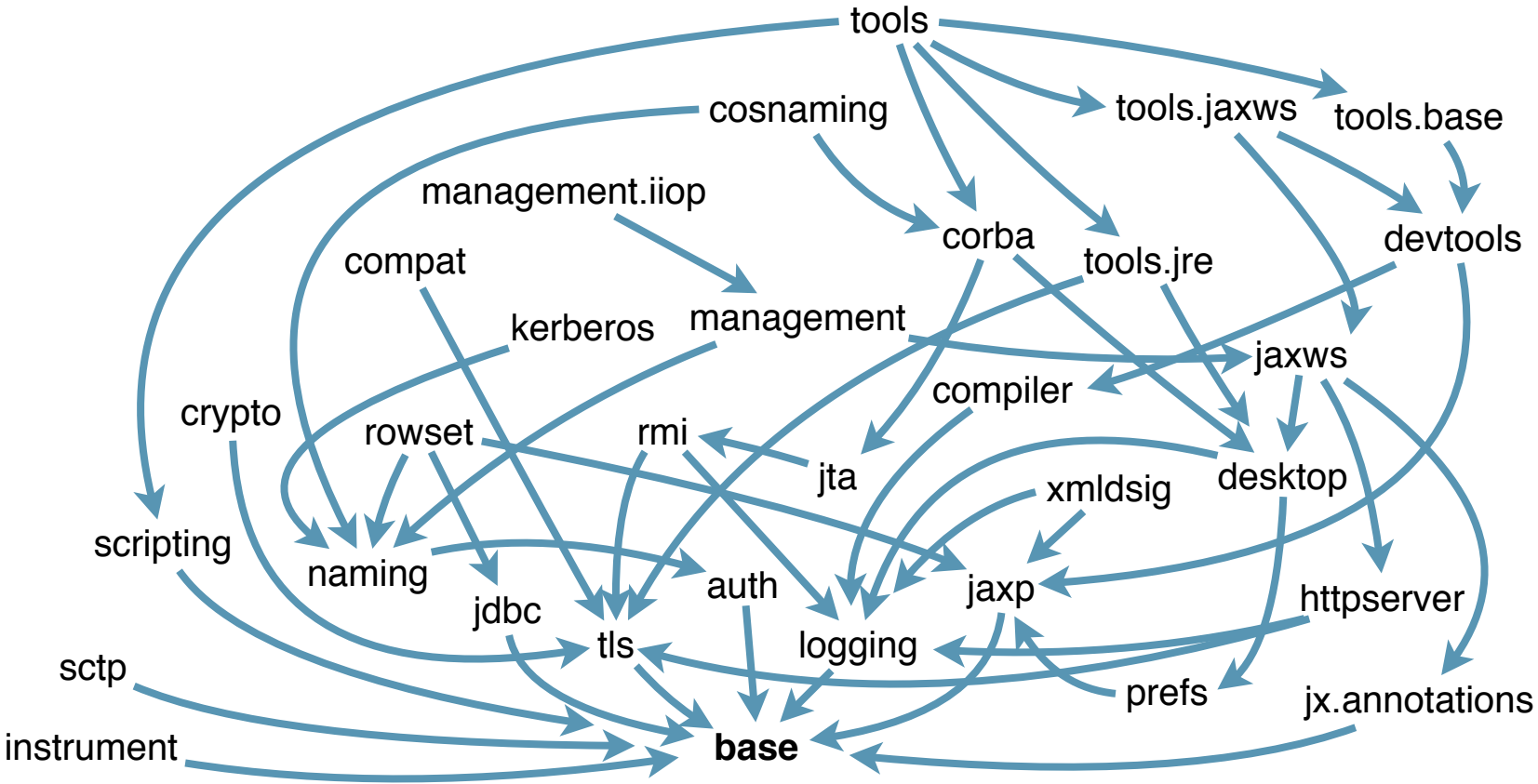
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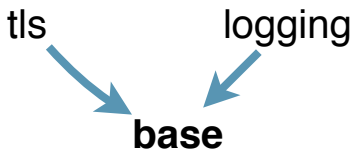
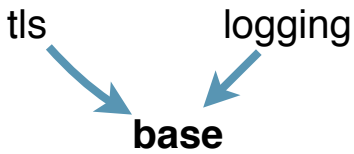
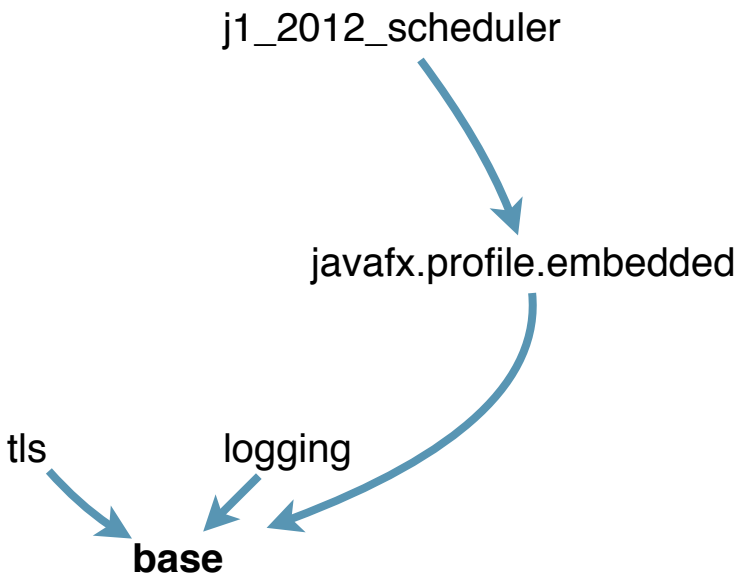

tls
logging
base

j1_2012_scheduler

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logging
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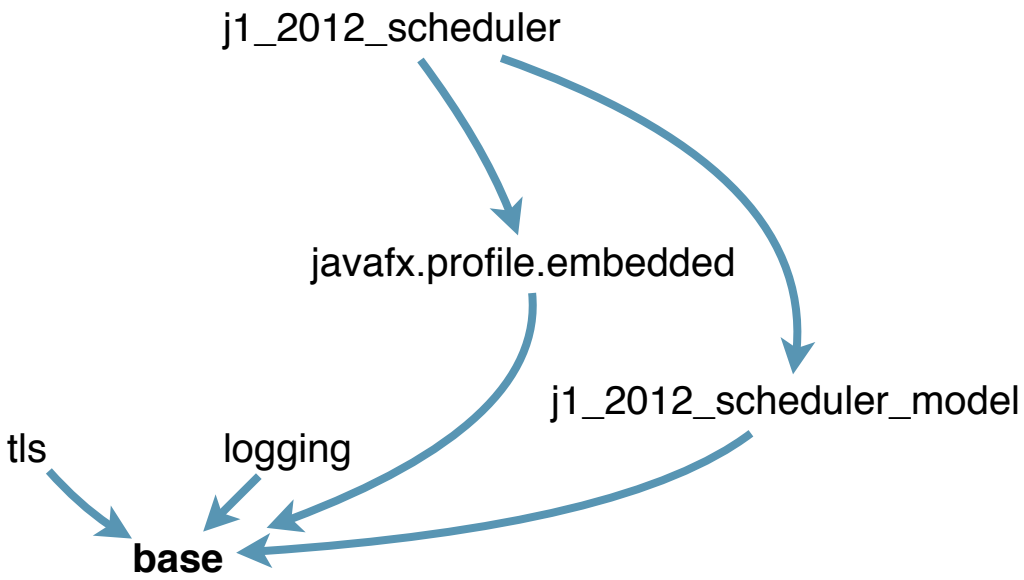
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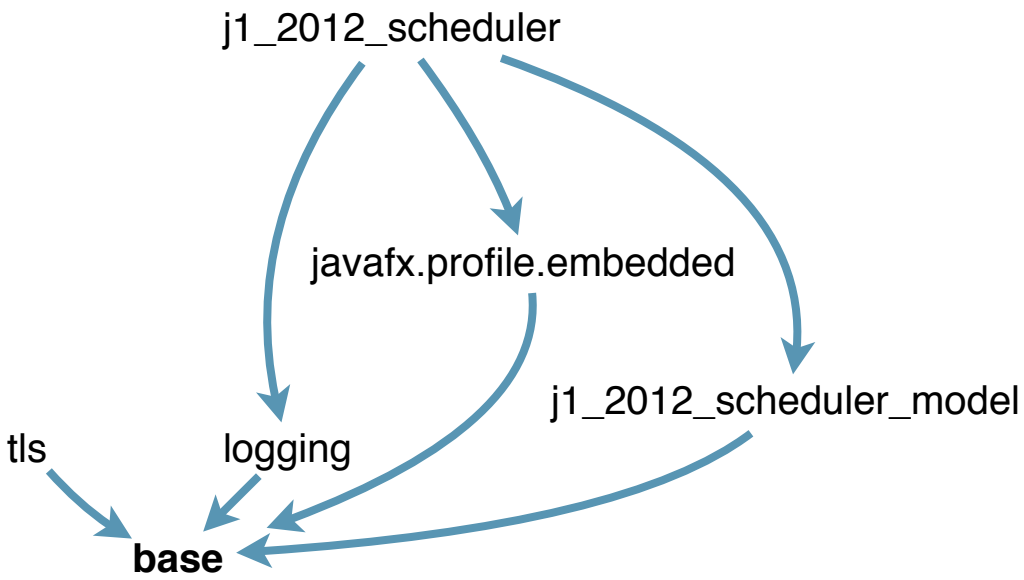
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j1_2012_scheduler_model
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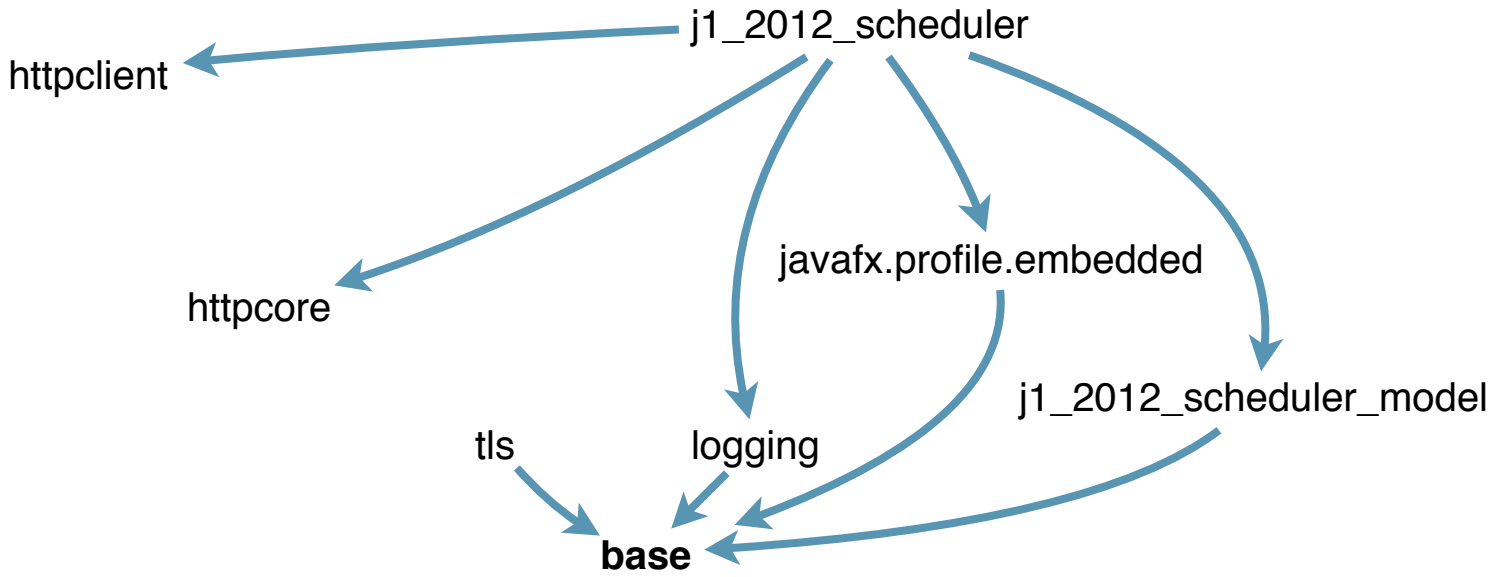
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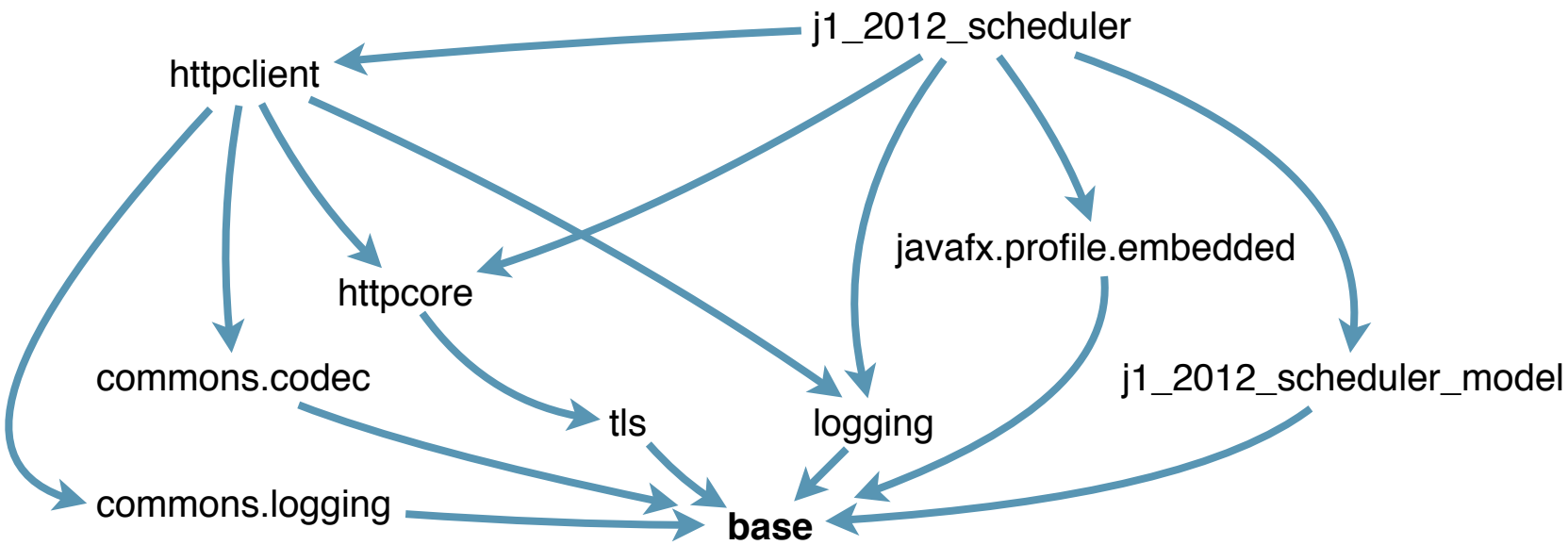
tls
logging
base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j1_2012_scheduler_model
tls
logging
commons.logging
base

Java 8

Lambda (JSR 335)

Java 8

Lambda (JSR 335)

Java 8

Compact Profiles

Lambda (JSR 335)

Java 8

Compact Profiles

Nashorn

Lambda (JSR 335)

Date/Time API (JSR 310)

Java 8

Compact Profiles

Nashorn

Lambda (JSR 335)

Date/Time API (JSR 310)

Java 8

Compact Profiles

Nashorn

Type Annotations (JSR 308)

NSA Suite B

Base64

HTTP Client

Bulk Data Operations

Unicode 6.2

Prepare for Modularization

Lambda (JSR 335)

Remove the Permanent Generation

Generalized Target-Type Inference

Date/Time API (JSR 310)

Improve Contended Locking

Java 8

Unicode CLDR

Parallel Array Sorting

Compact Profiles

DocTree API

Nashorn

Configurable Secure-Random Number Generation

TLS Server Name Indication

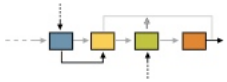
Type Annotations (JSR 308)

Lambda-Form Representation for Method Handles

Java 8

OpenJDK

Java Community Process



Java 8

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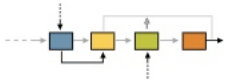
OpenJDK

Java Community Process



Java 8

http://openjdk.java.net/projects/jdk8
http://openjdk.java.net/projects/jdk8/spec
http://jdk8.java.net

Java 9 … and beyond!

Unified Type System

OpenJFX

Self Tuning JVM

Java 9 … and beyond!

Jigsaw

Ease of use

Reification

Unified Type System

Project Sumatra – Java for GPUs

Improved Native Integration

OpenJFX

Self Tuning JVM

Resource Management

Java 9 … and beyond!

Generic Lang Interoperability

Data Structure Optimizations

Jigsaw

Penrose

Ease of use

More and More Ports

Optimizations

Reification

Multi-Tenancy

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