redhat.

INTRODUCING

STORAGE INSTANTIATION DAEMON

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UEVENTS
OVERVIEW

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USER SPACE

KERNEL SPACE

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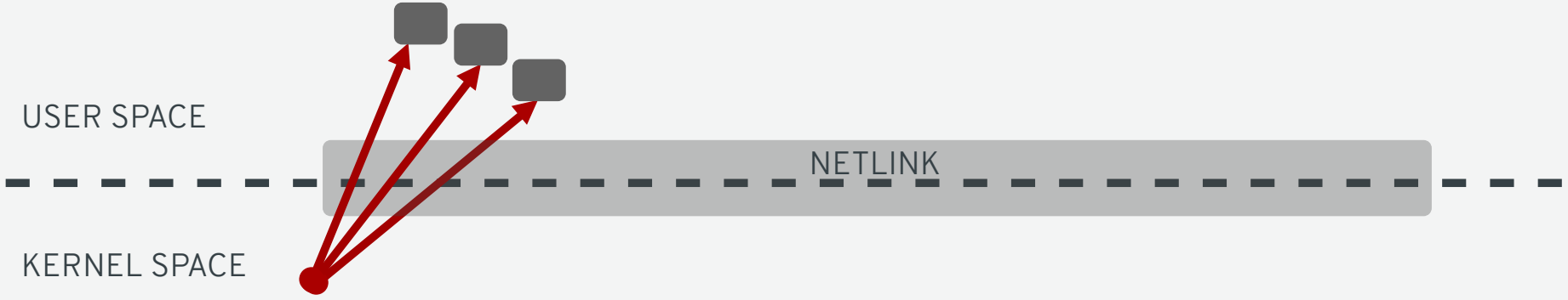

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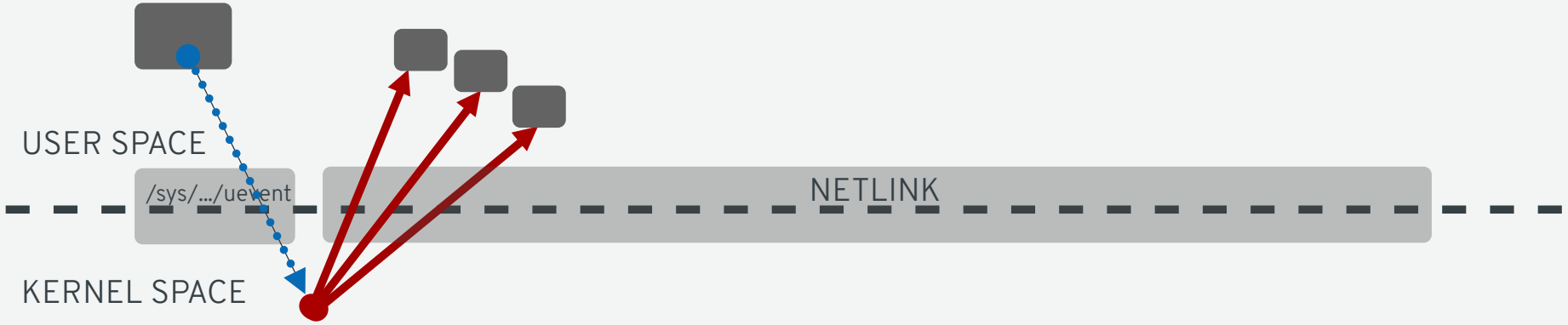

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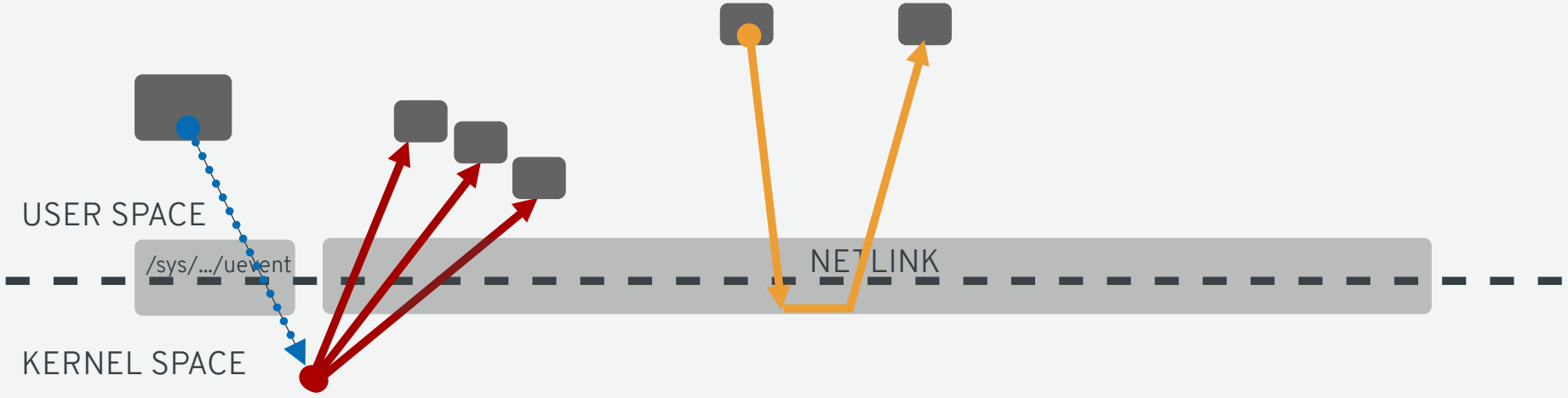

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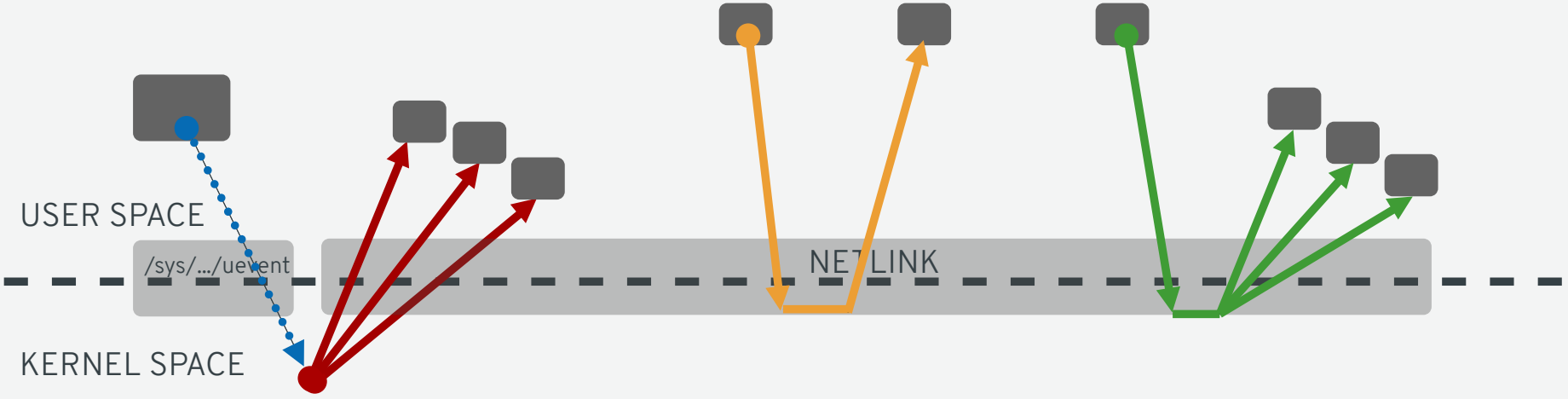

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- **others able to monitor *kernel* and/or *udev* uevents**

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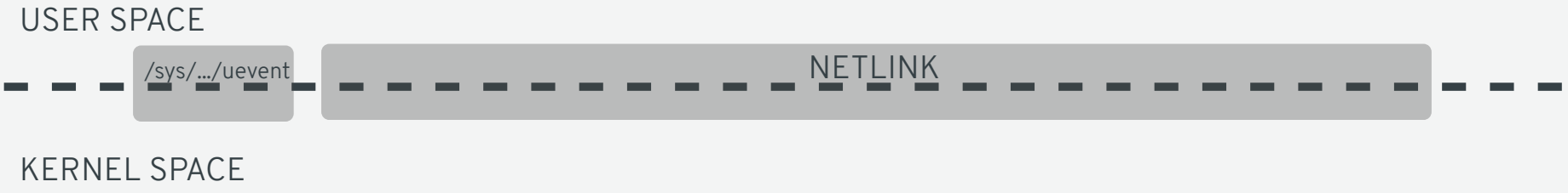

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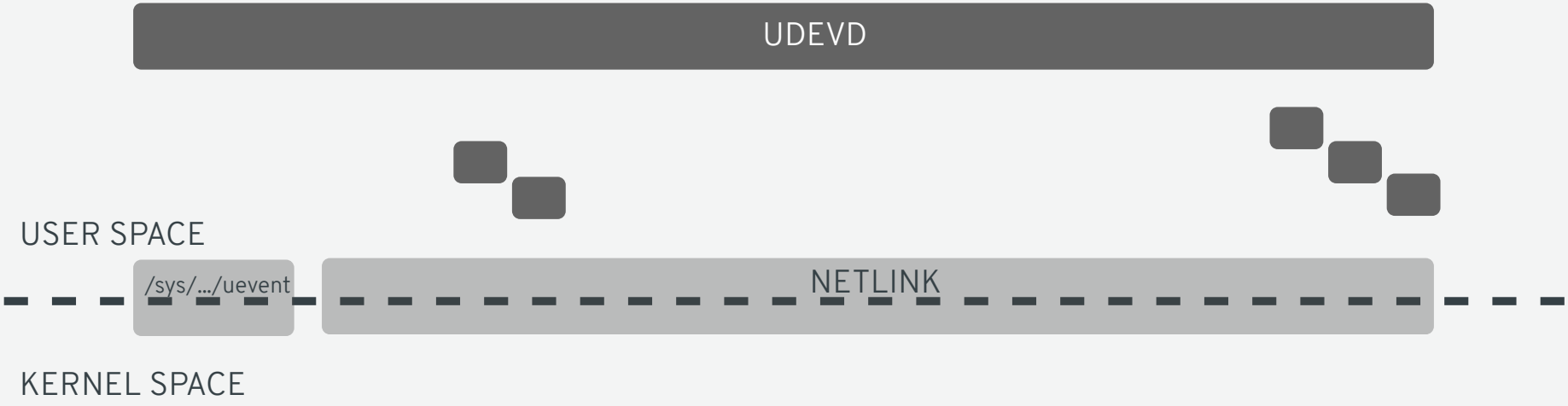

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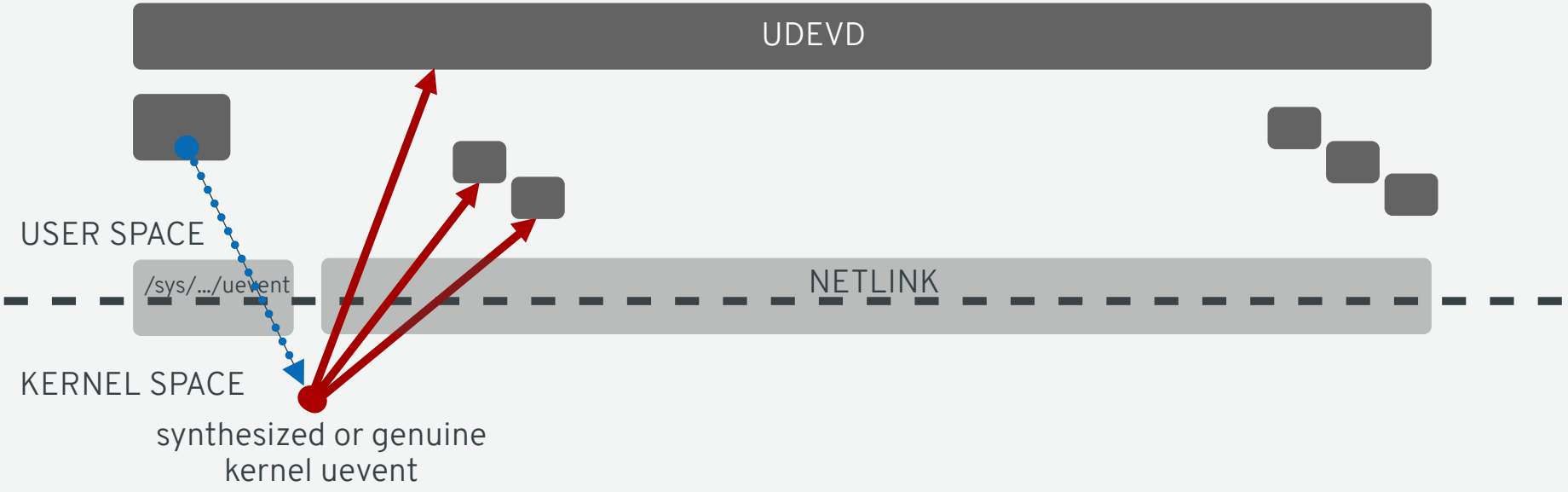

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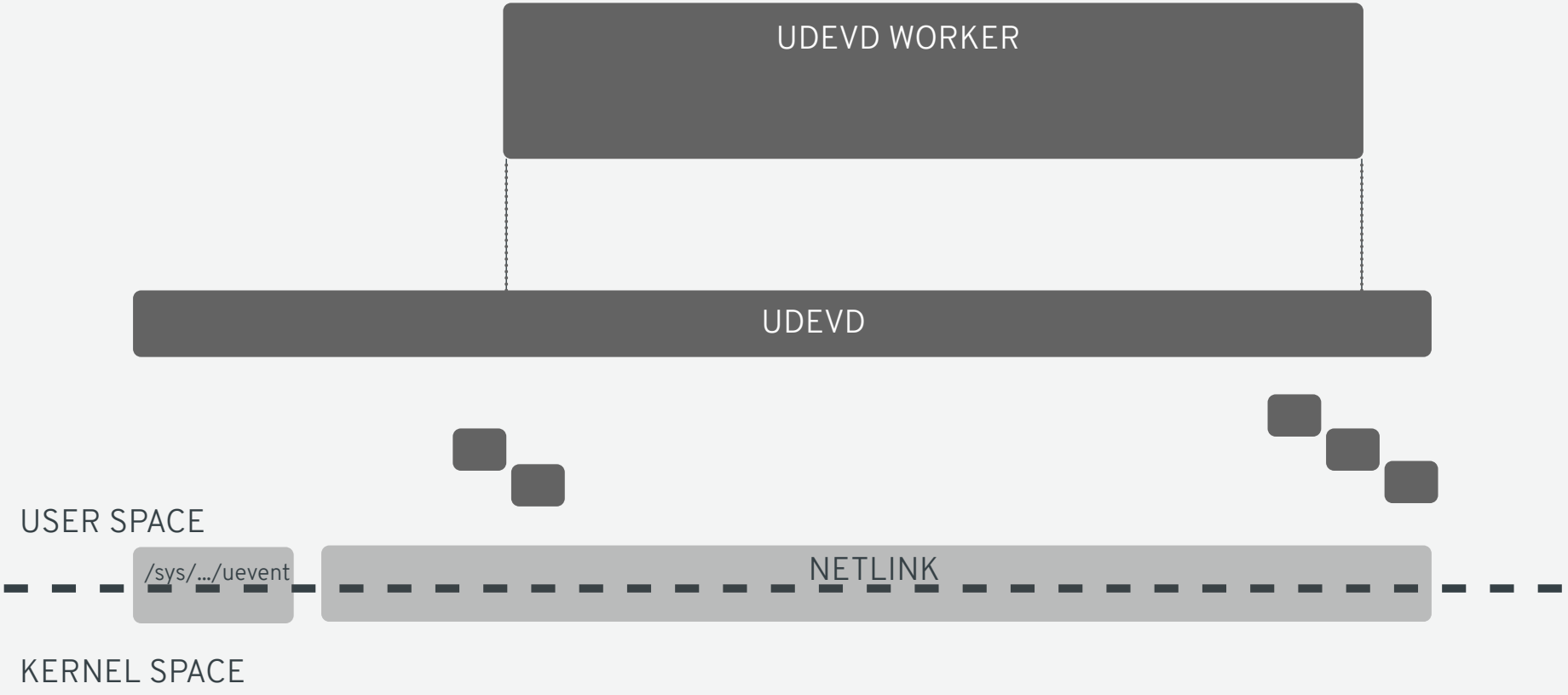

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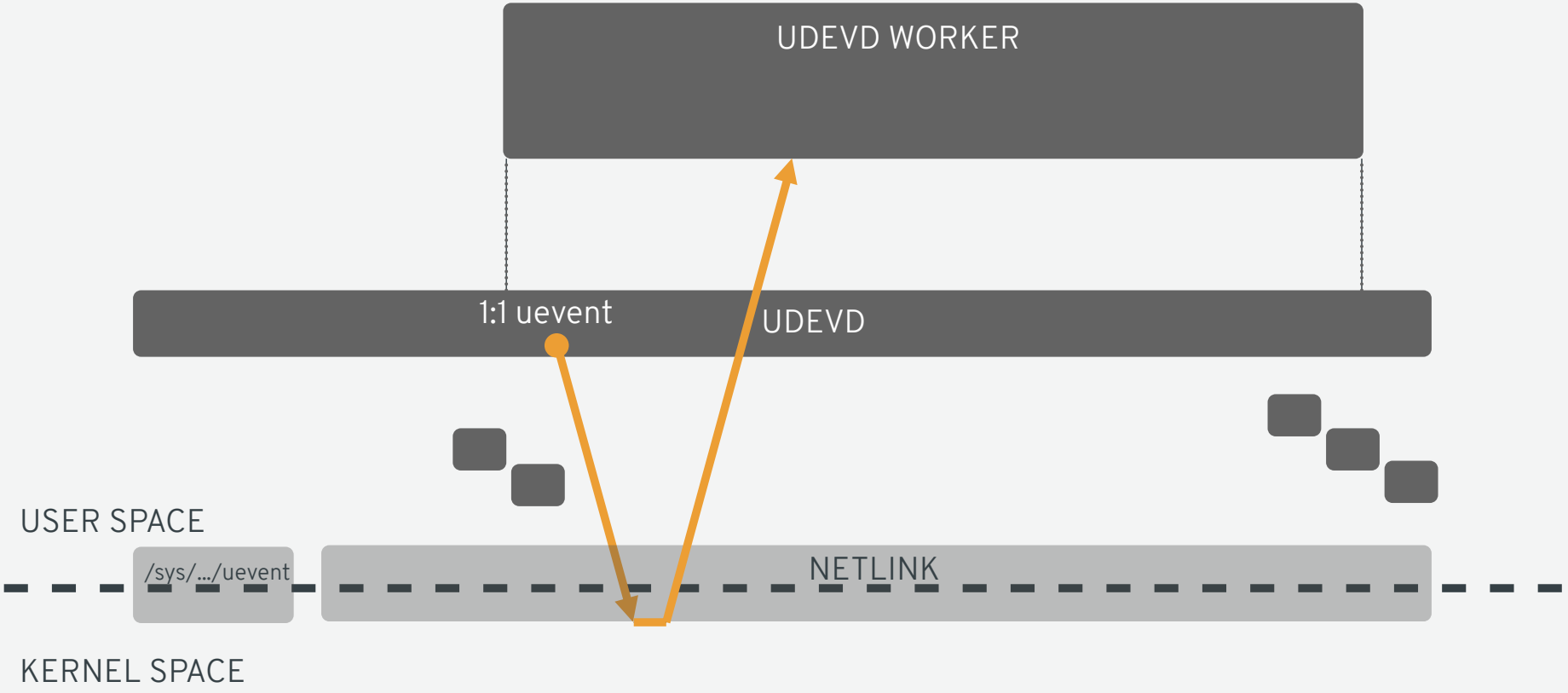

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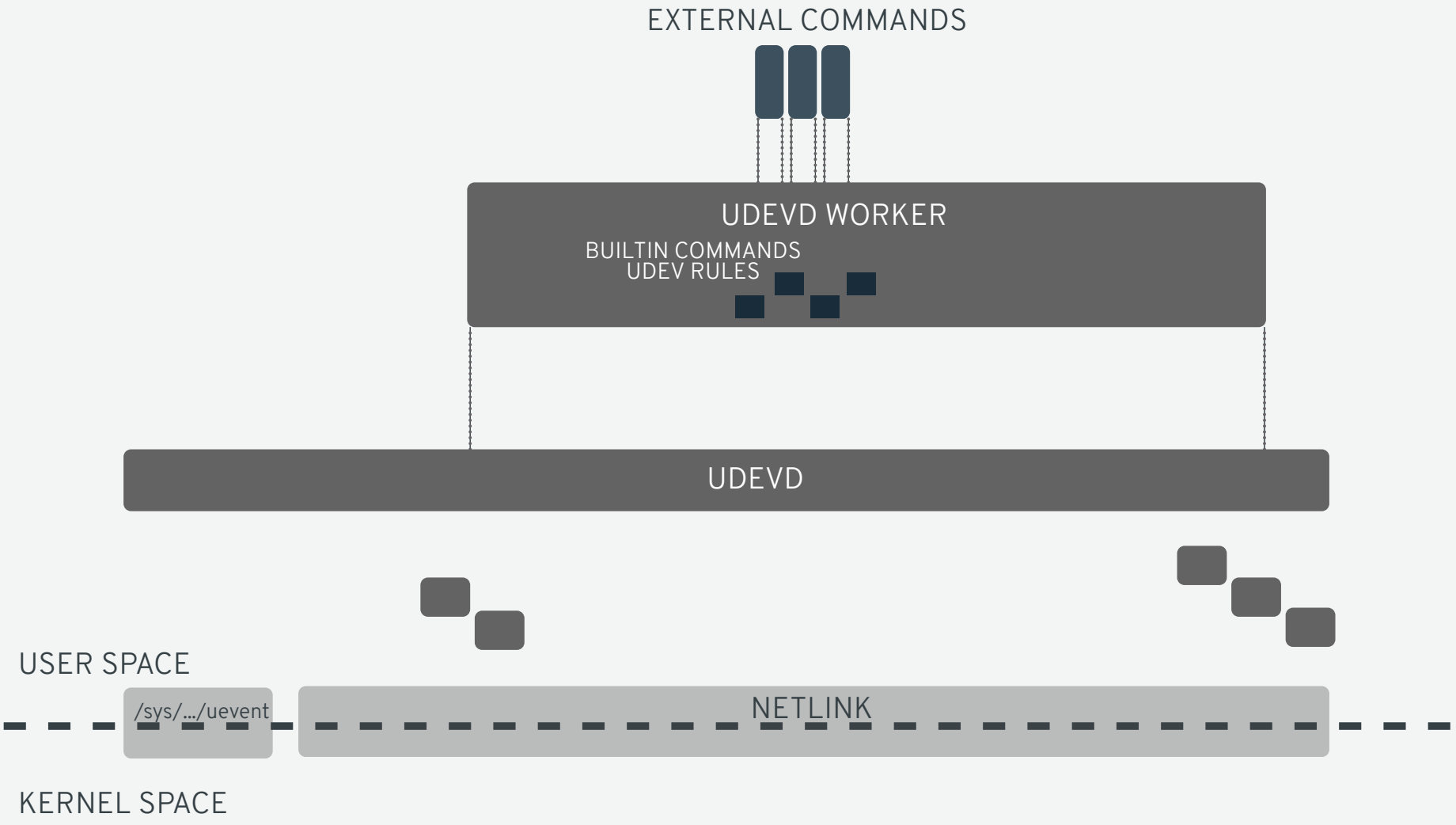

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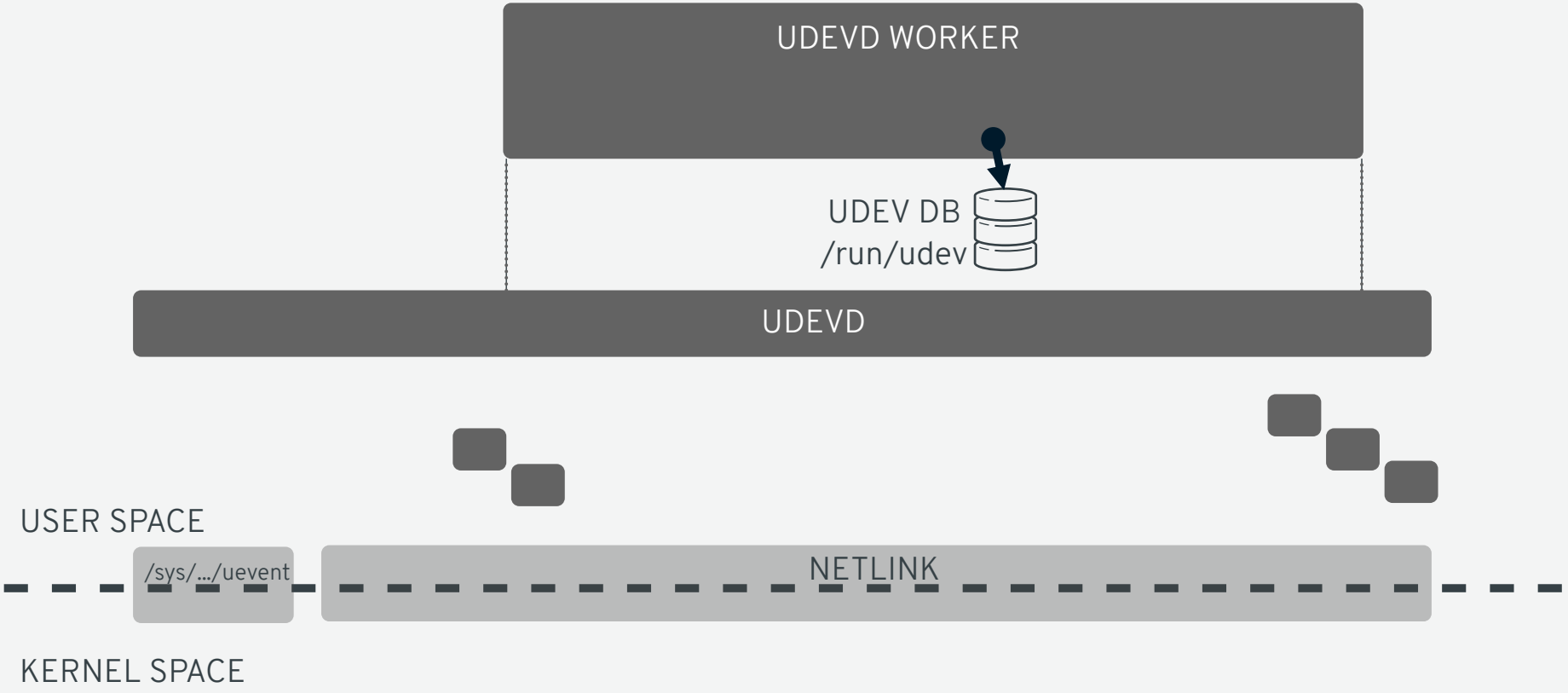

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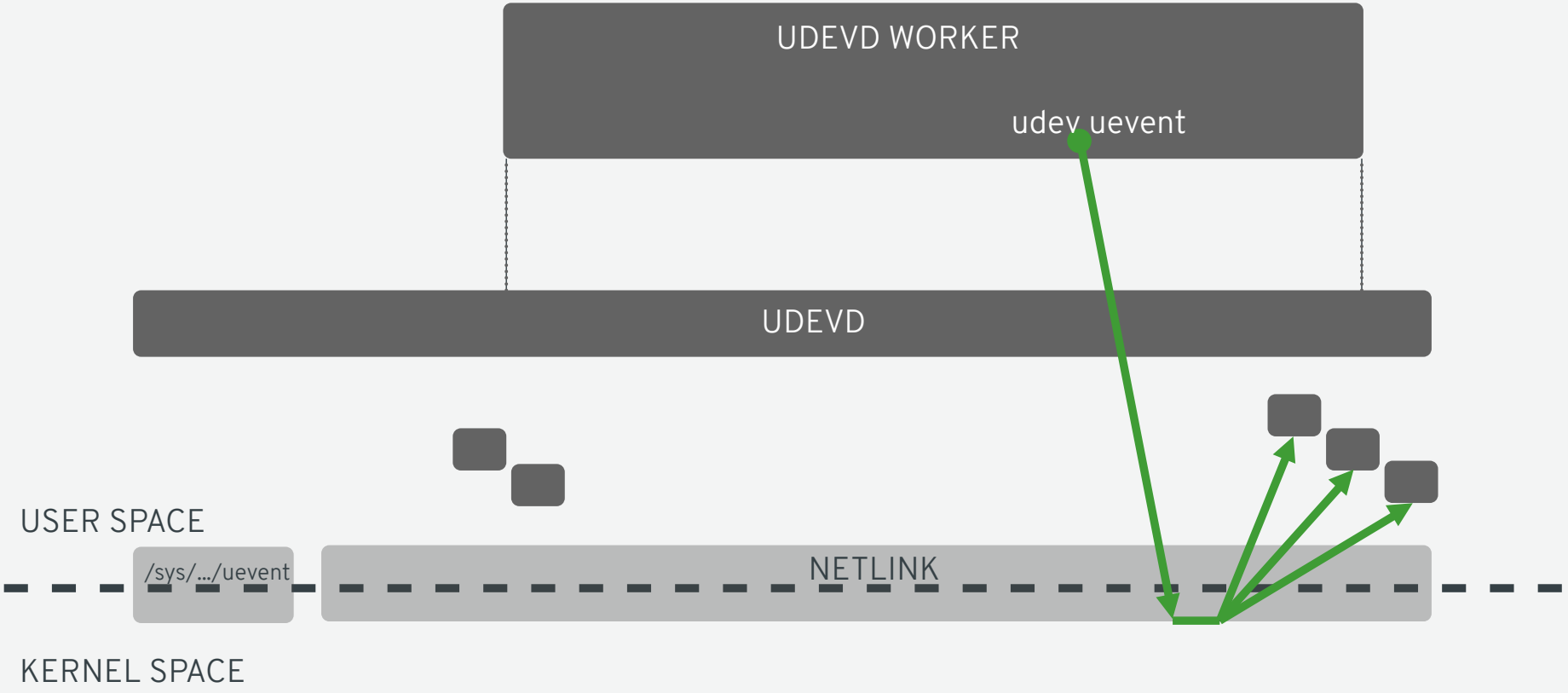

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- **the reality: device usable after further actions**
  - initialization sequence
  - multistep activation scheme
  - grouping
  - layering
- **devices may contain signatures/metadata/external configuration that define the next layer in the stack**
  - *blkid* scan for the majority
  - *multipath -c* to detect multipath components
  - detached header location for LUKS encrypted devices
  - further additional scans by various subsystems

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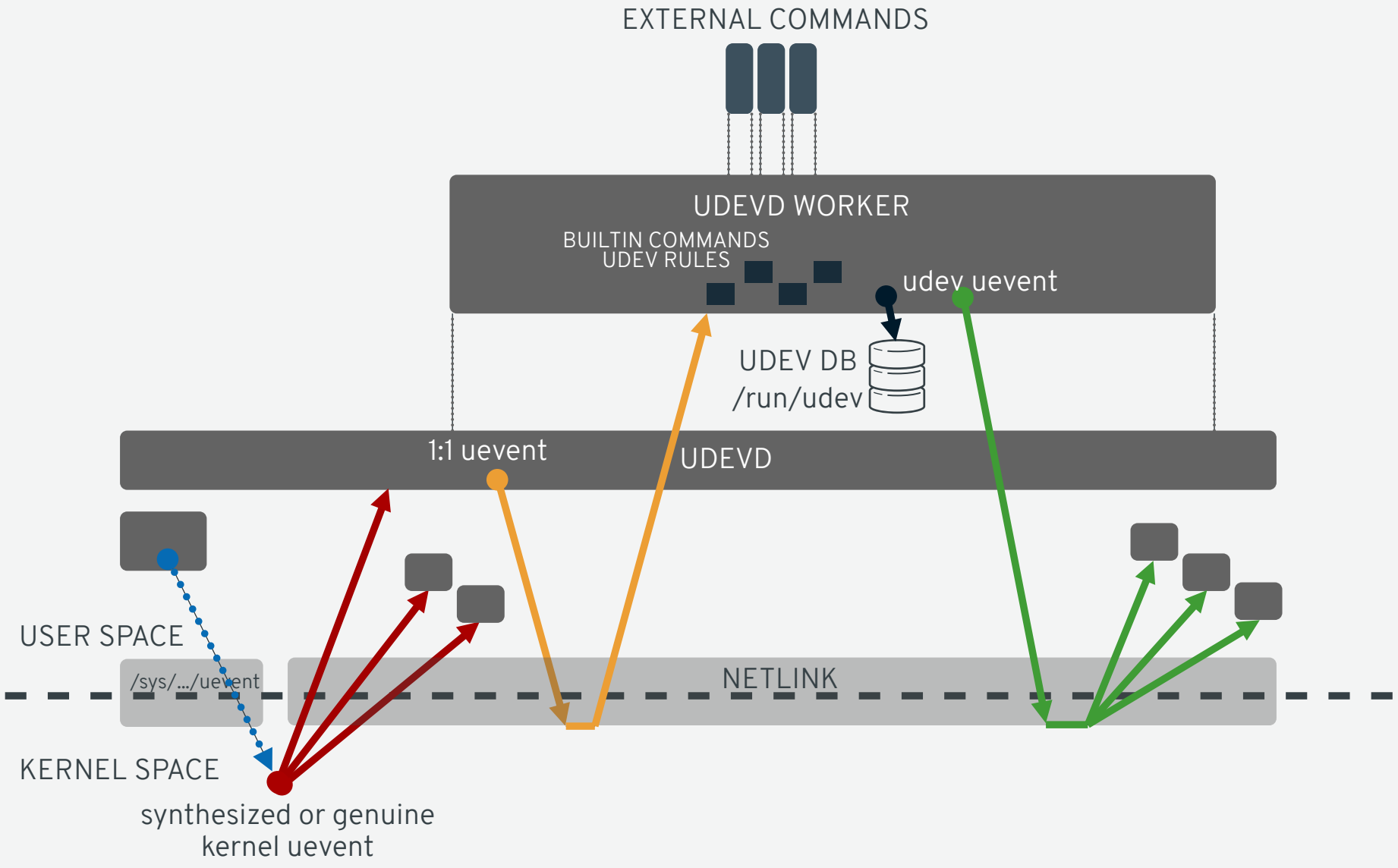
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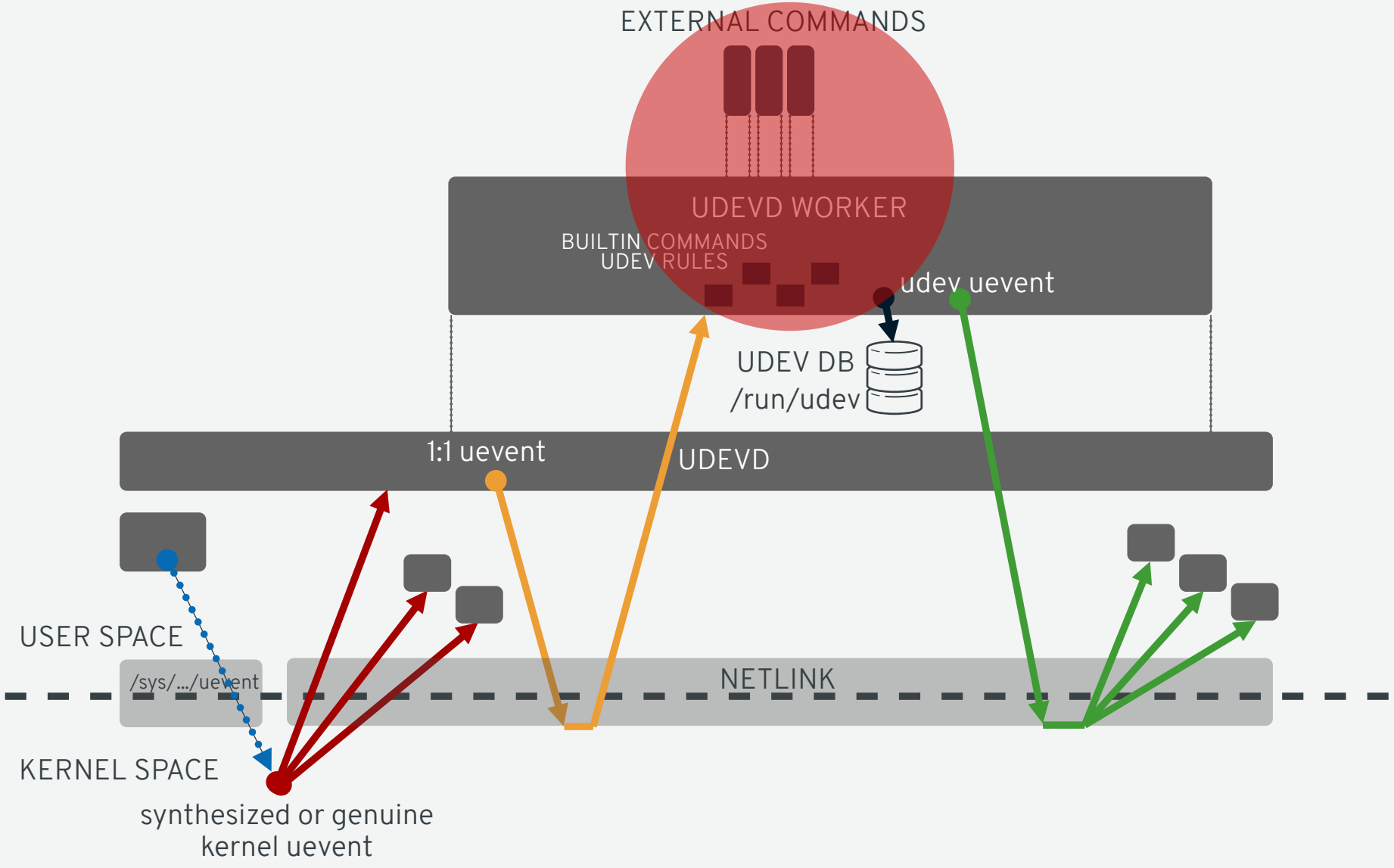
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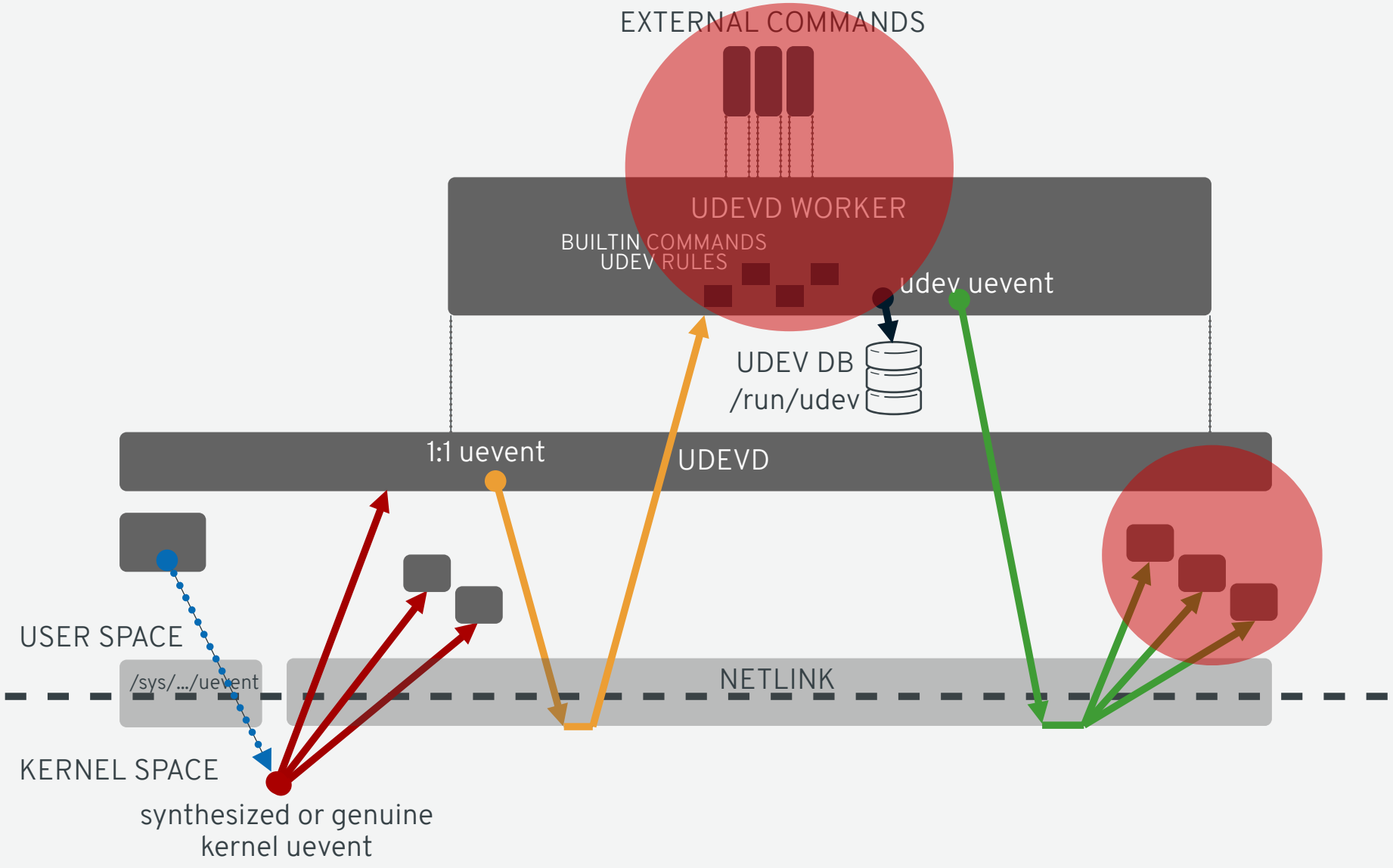
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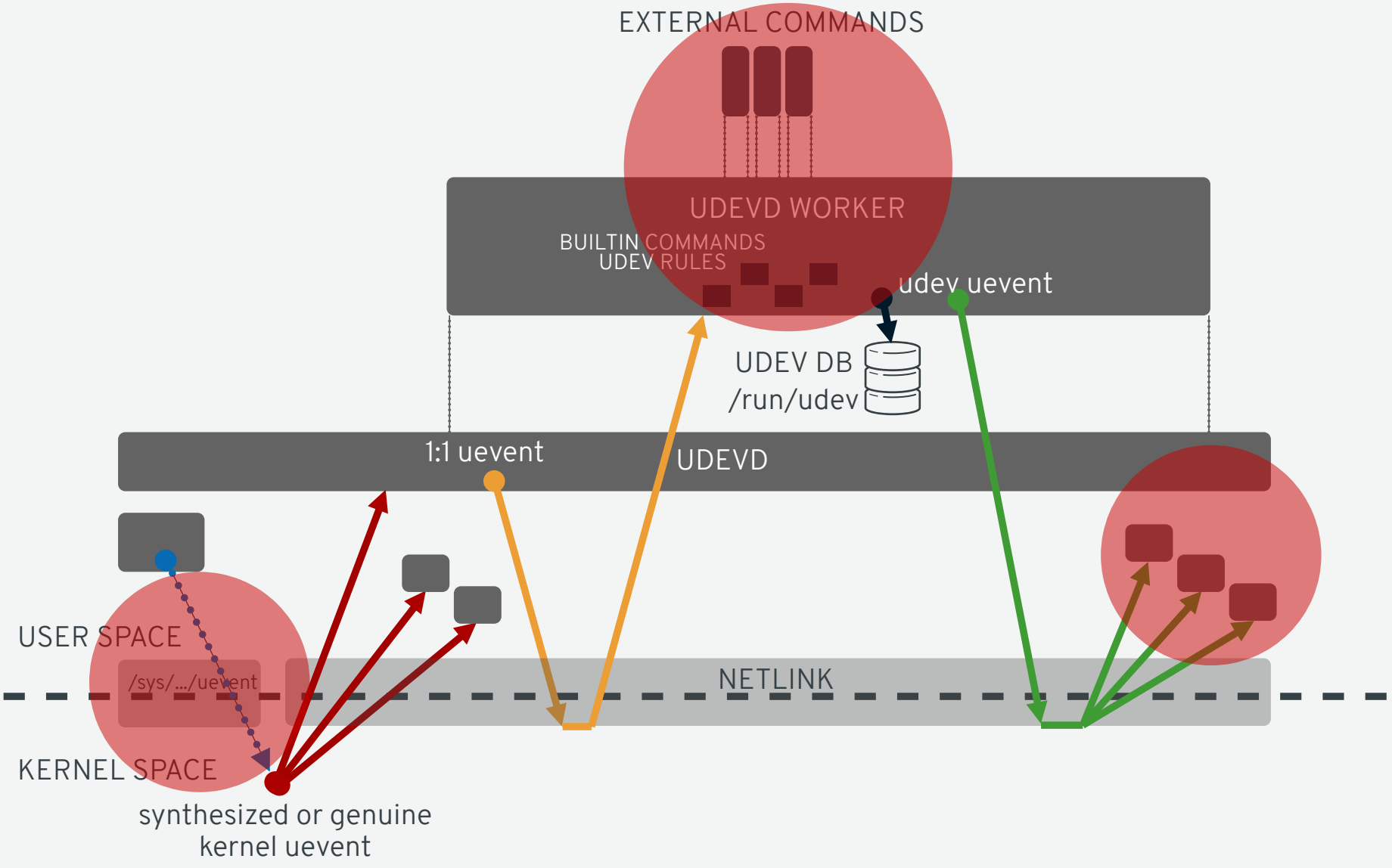
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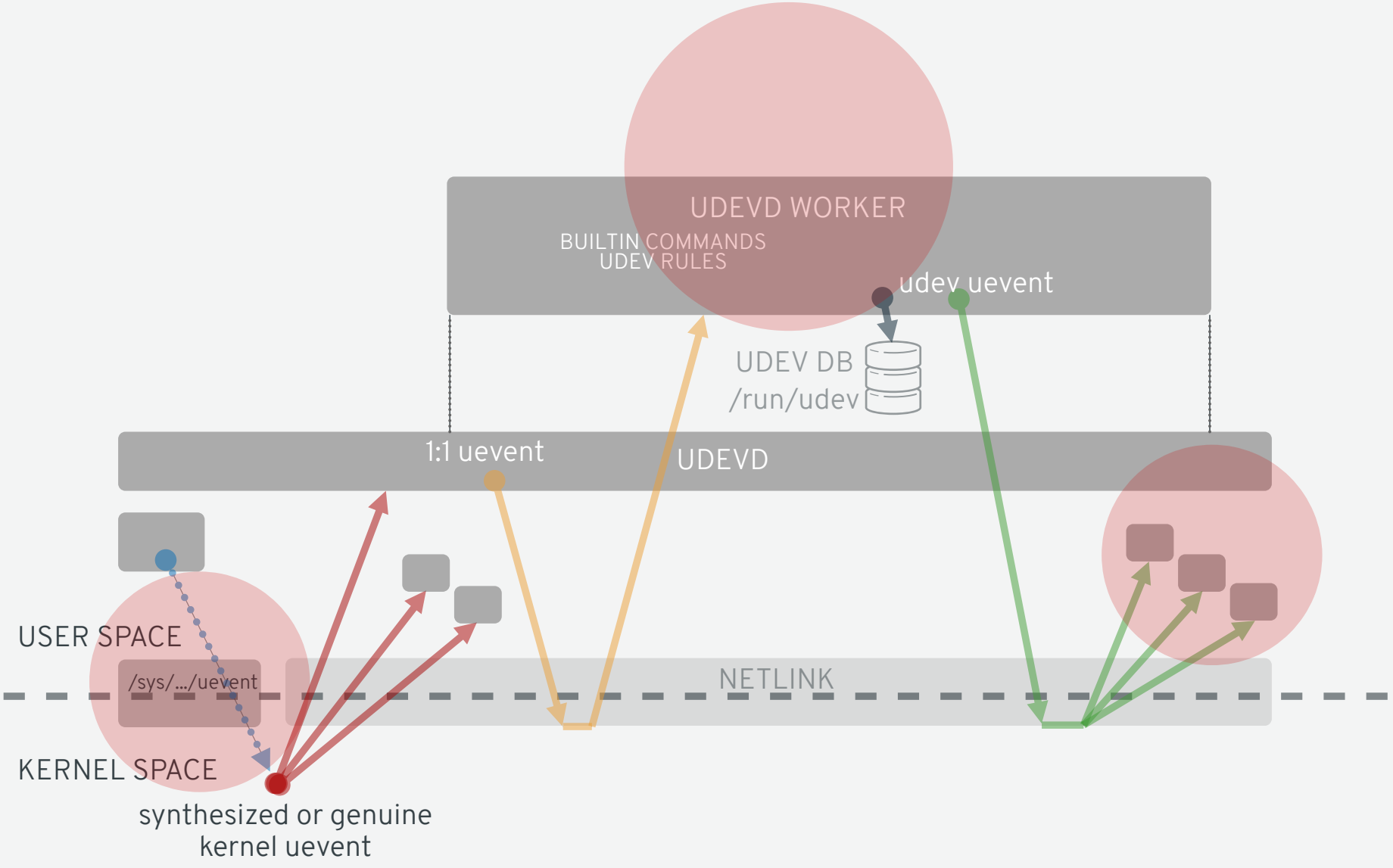
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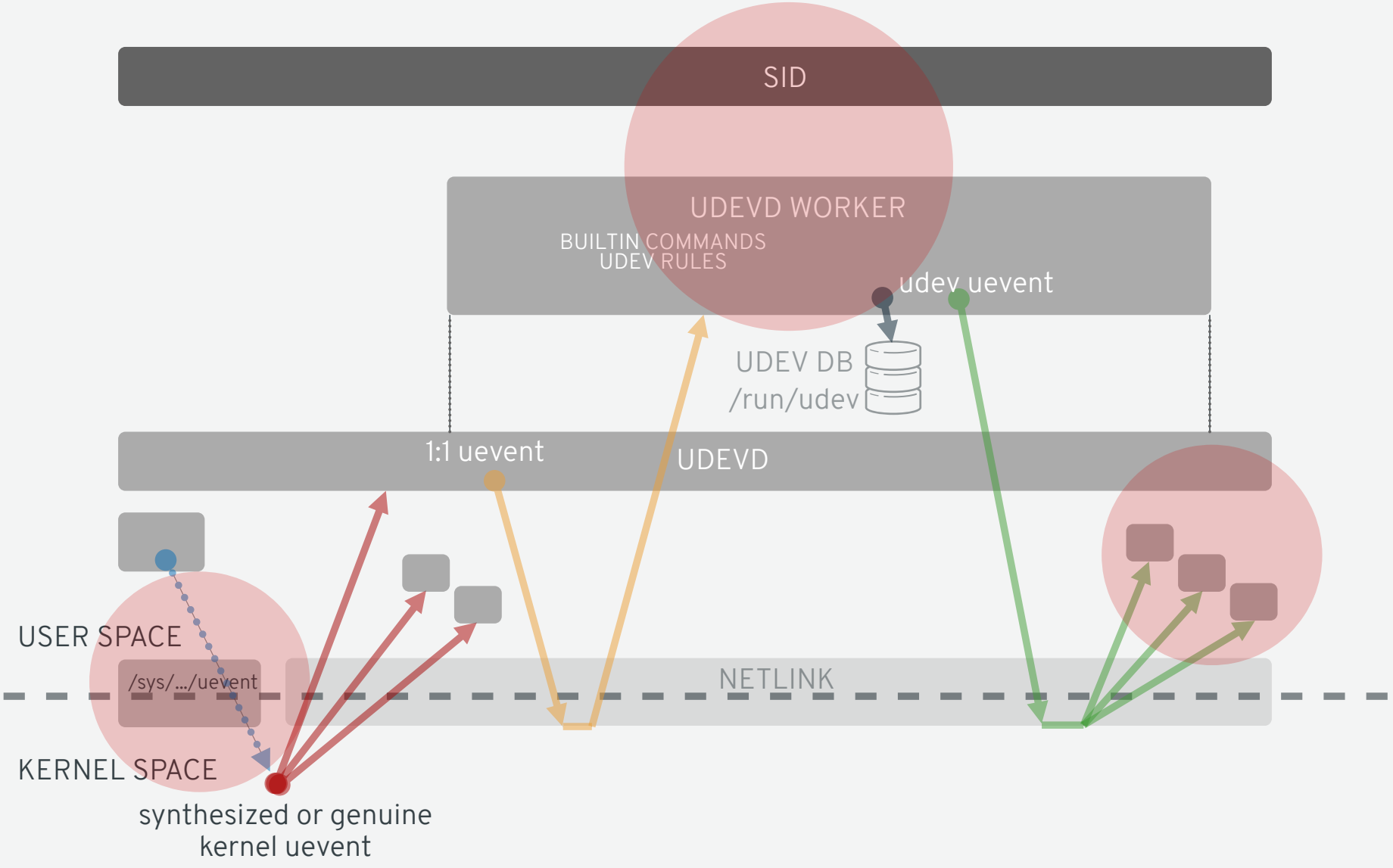
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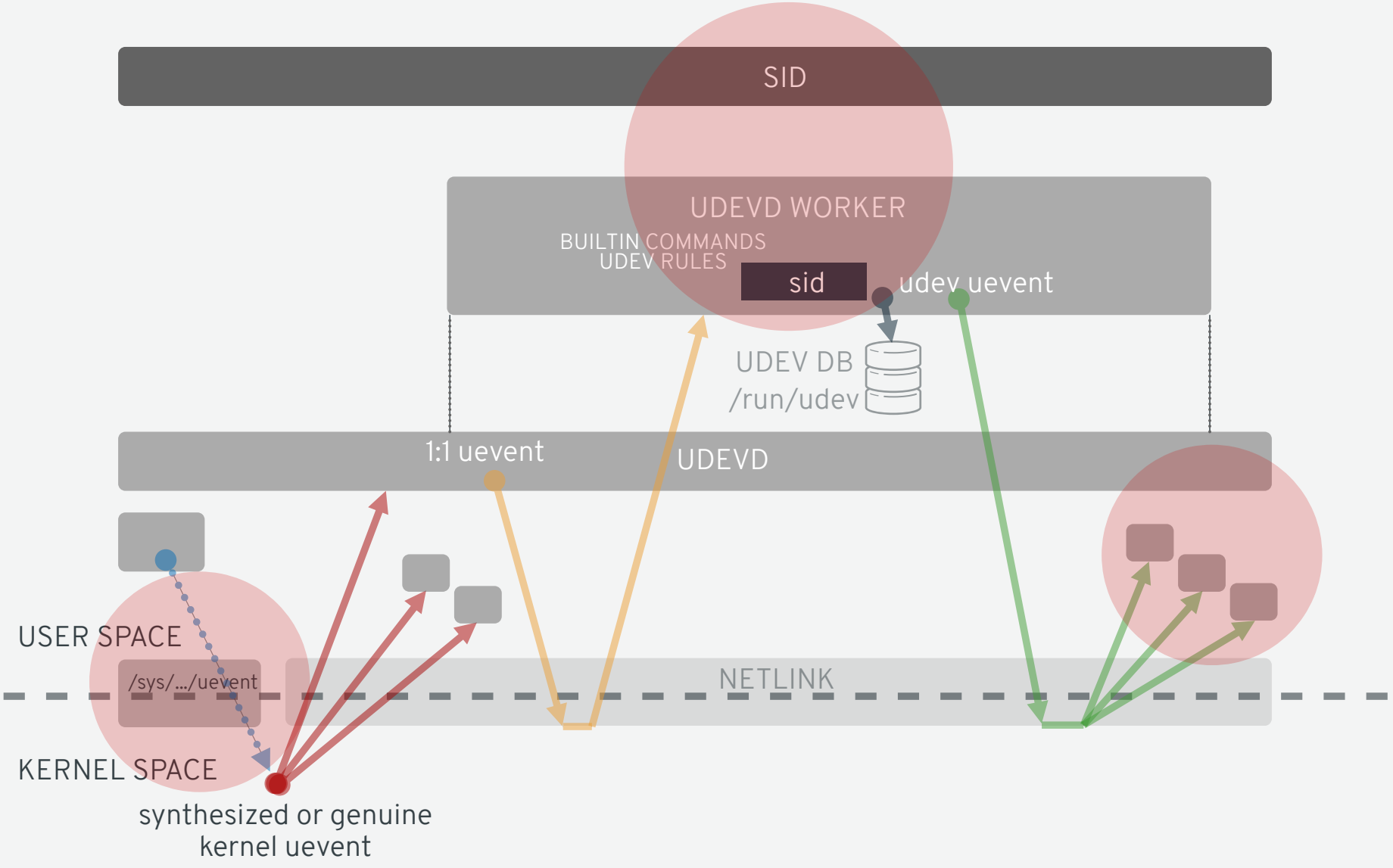
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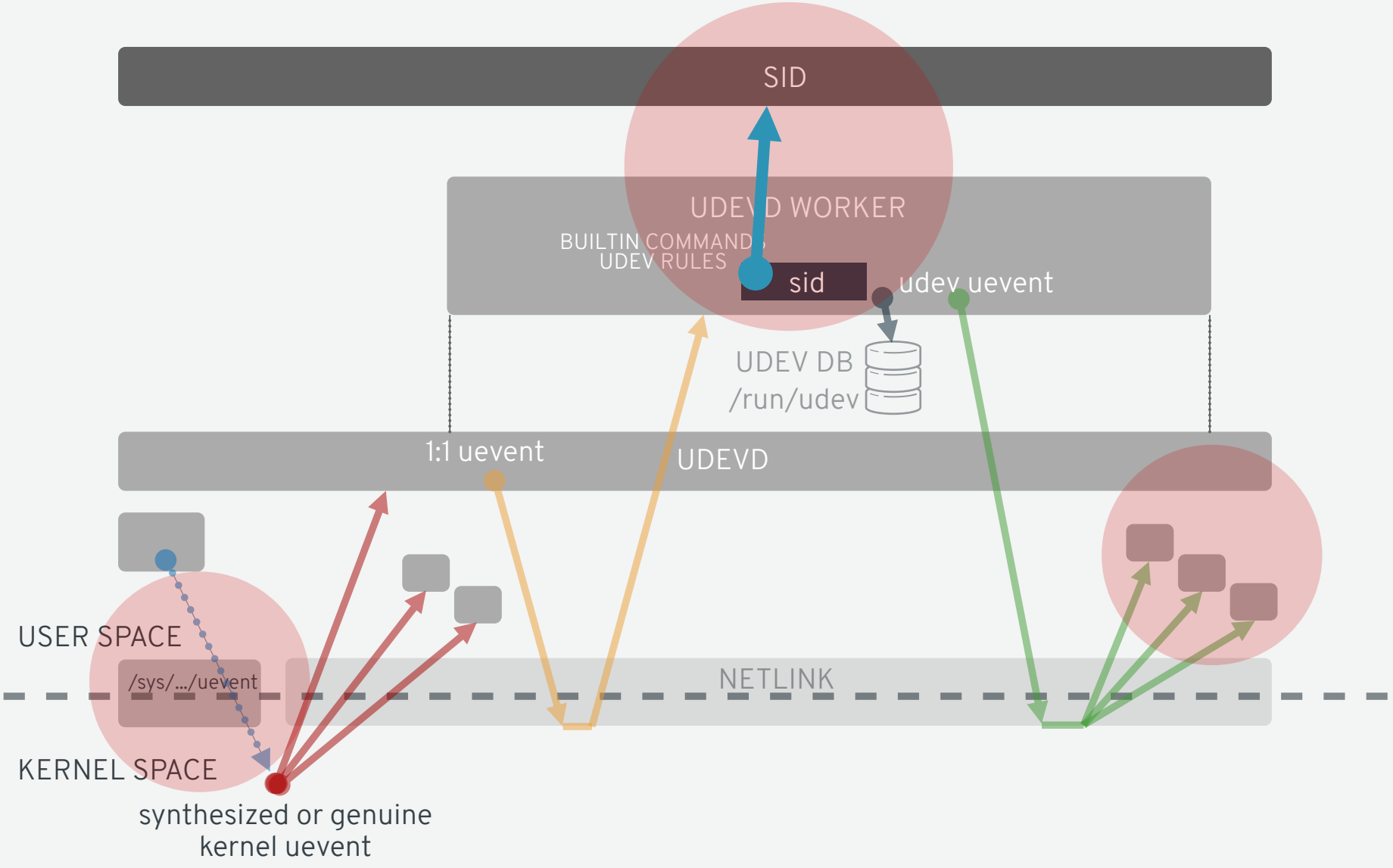
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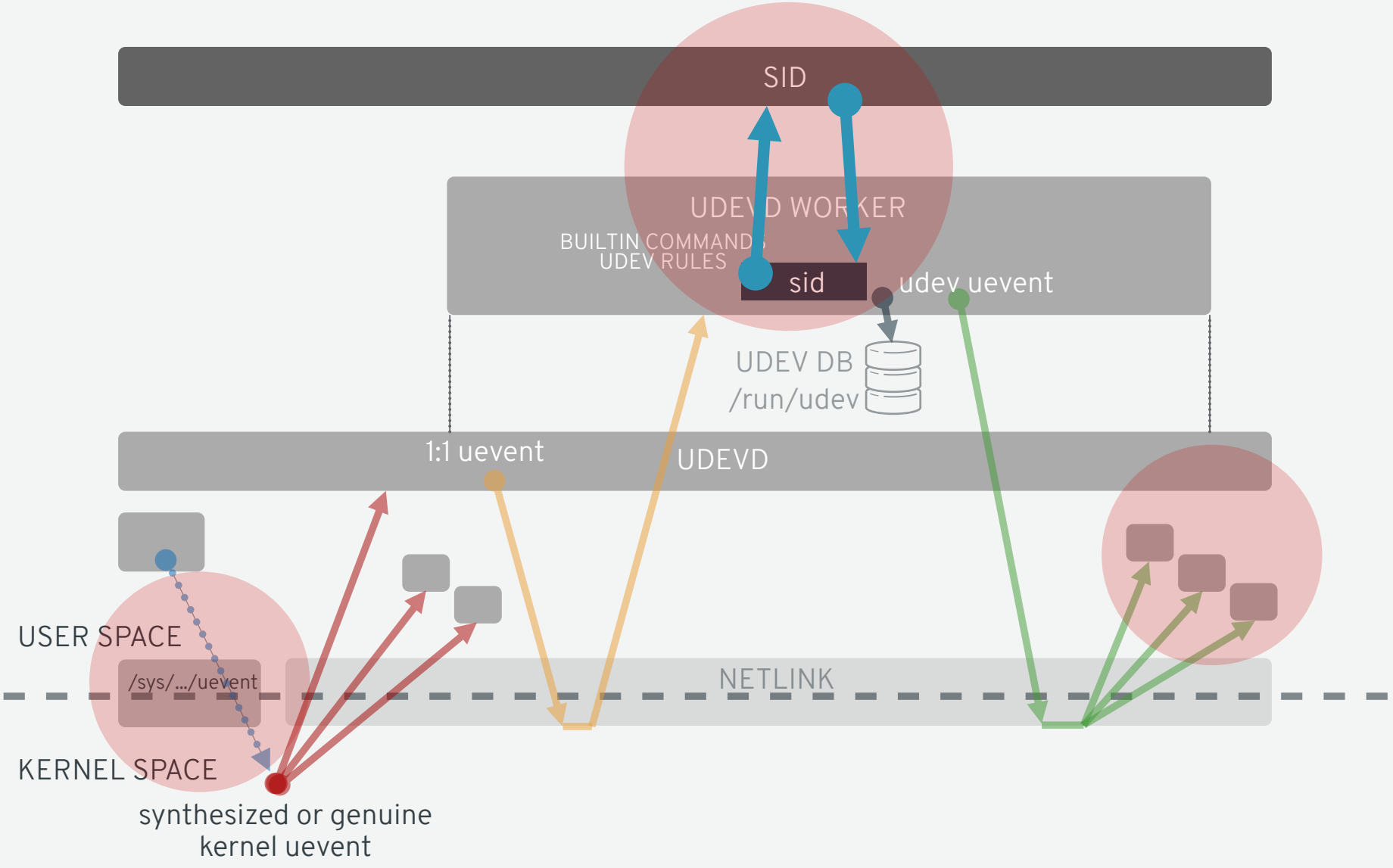
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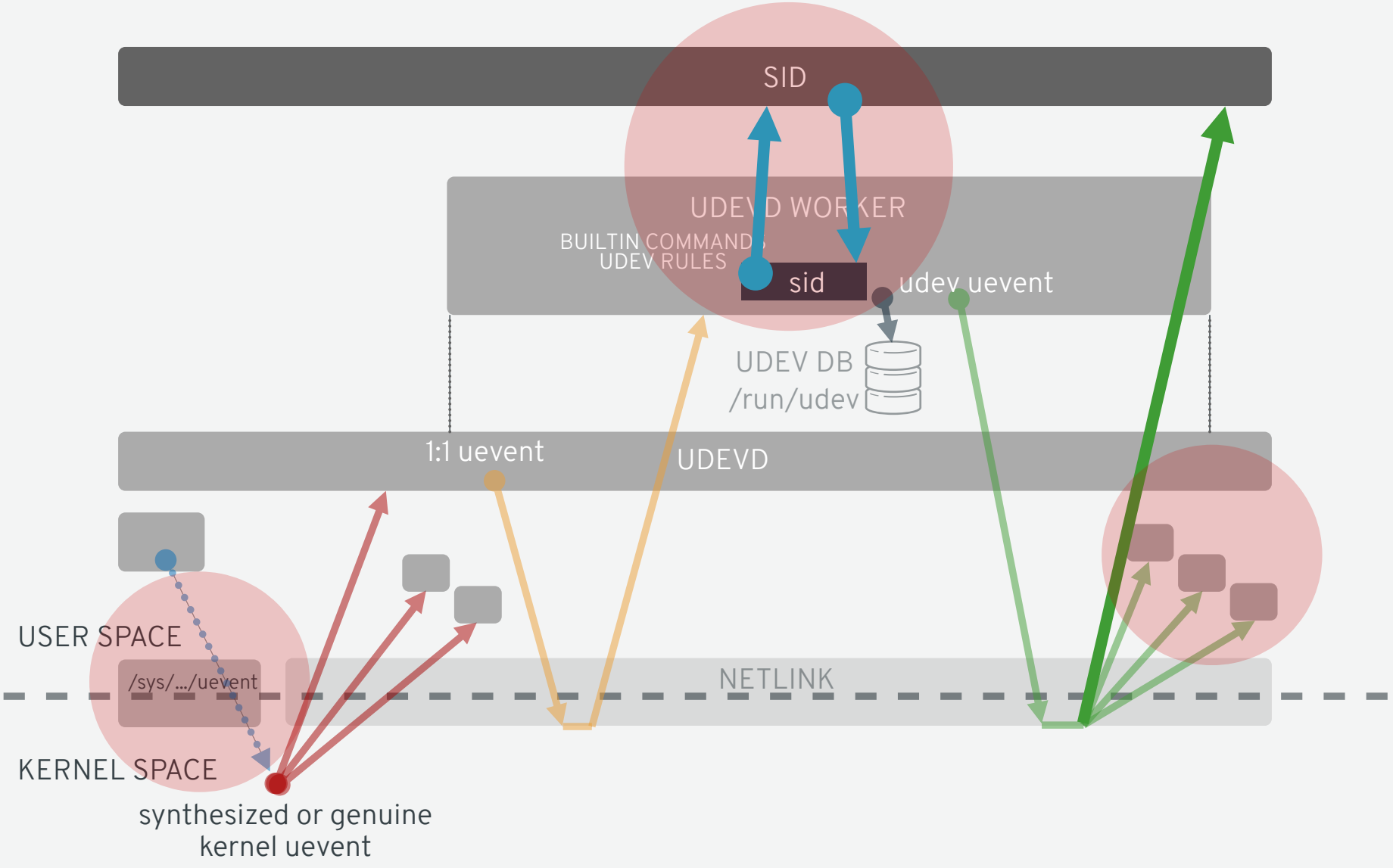
UDEV RULES
sid
udev uevent
UDEV DB
/run/udev
1:1 uevent
UDEVD
USER SPACE
/sys/.../uevent
NETLINK
KERNEL SPACE
synthesized or genuine
kernel uevent

CHANGES


SID
UDEV WORKER
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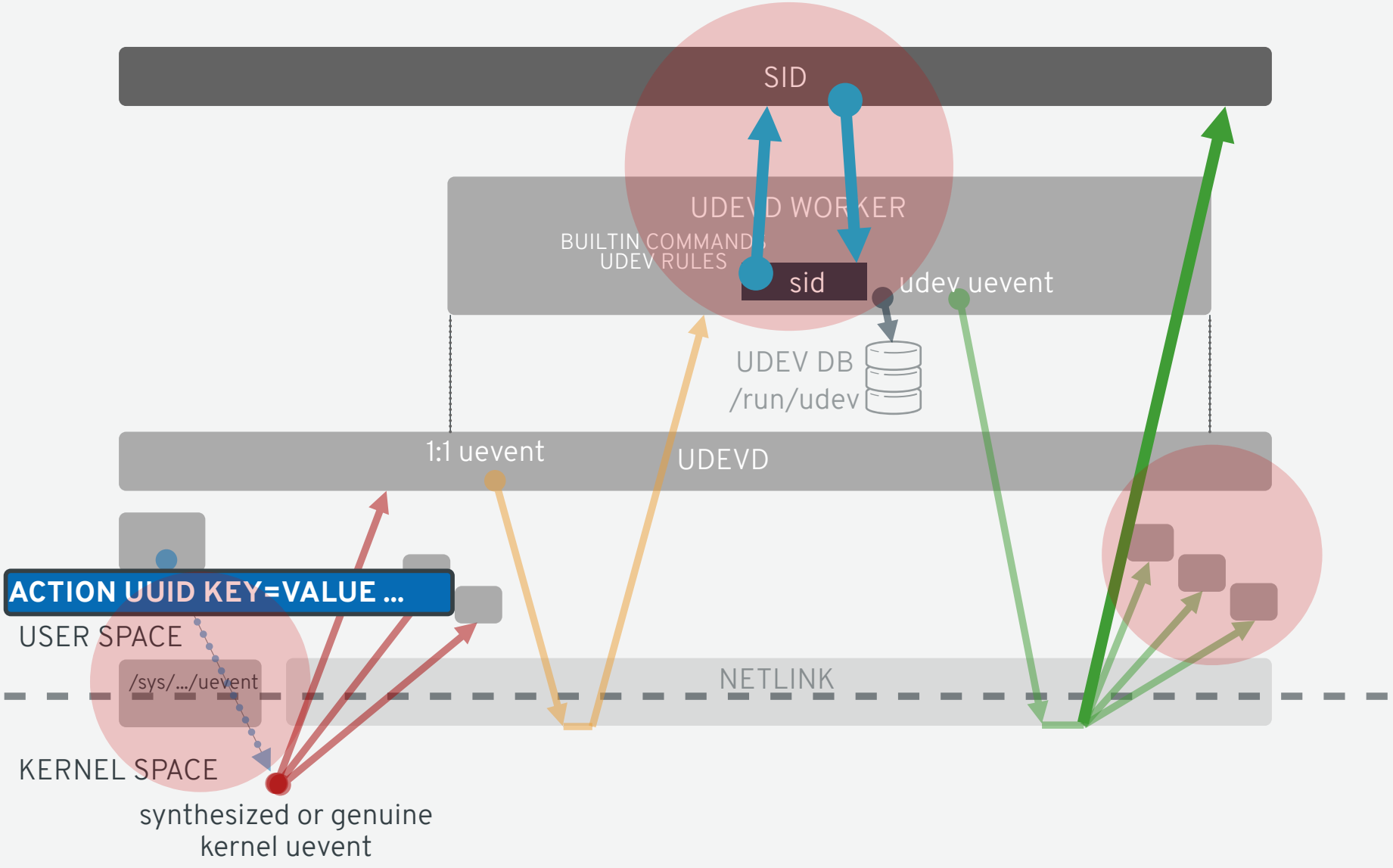
SID
UDEV D WOR KER
BUILTIN COMMANDS
UDEV RULES
sid
udev uevent
UDEV DB
/run/udev
1:1 uevent
UDEVD
ACTION UUID KEY=VALUE ...
USER SPACE
/sys/.../uevent
NETLINK
KERNEL SPACE
synthesized or genuine
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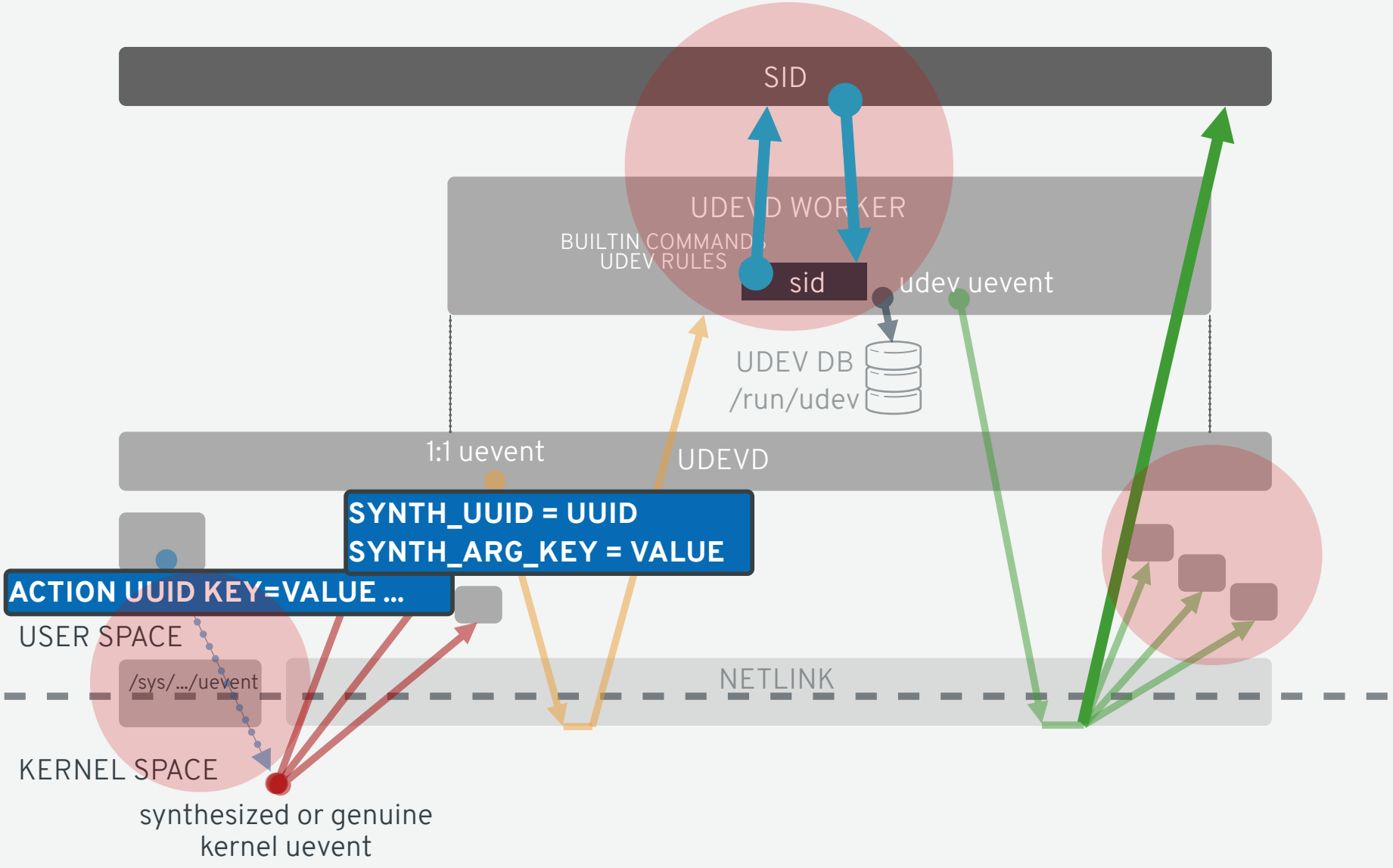
CHANGES


SID
UDEV WORKER
BUILTIN COMMANDS
UDEV RULES
sid
udev uevent
UDEV DB
/run/udev
1:1 uevent
UDEVD
SYNTH_UUID = UUID
SYNTH_ARG_KEY = VALUE
ACTION UUID KEY=VALUE ...
USER SPACE
/sys/.../uevent
NETLINK
KERNEL SPACE
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STORAGE INSTANTIATION

DAEMON AND COMPONENTS

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  - layered on top of udev
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- ***sidctl* command line interface**
  - control and access SID and its information store

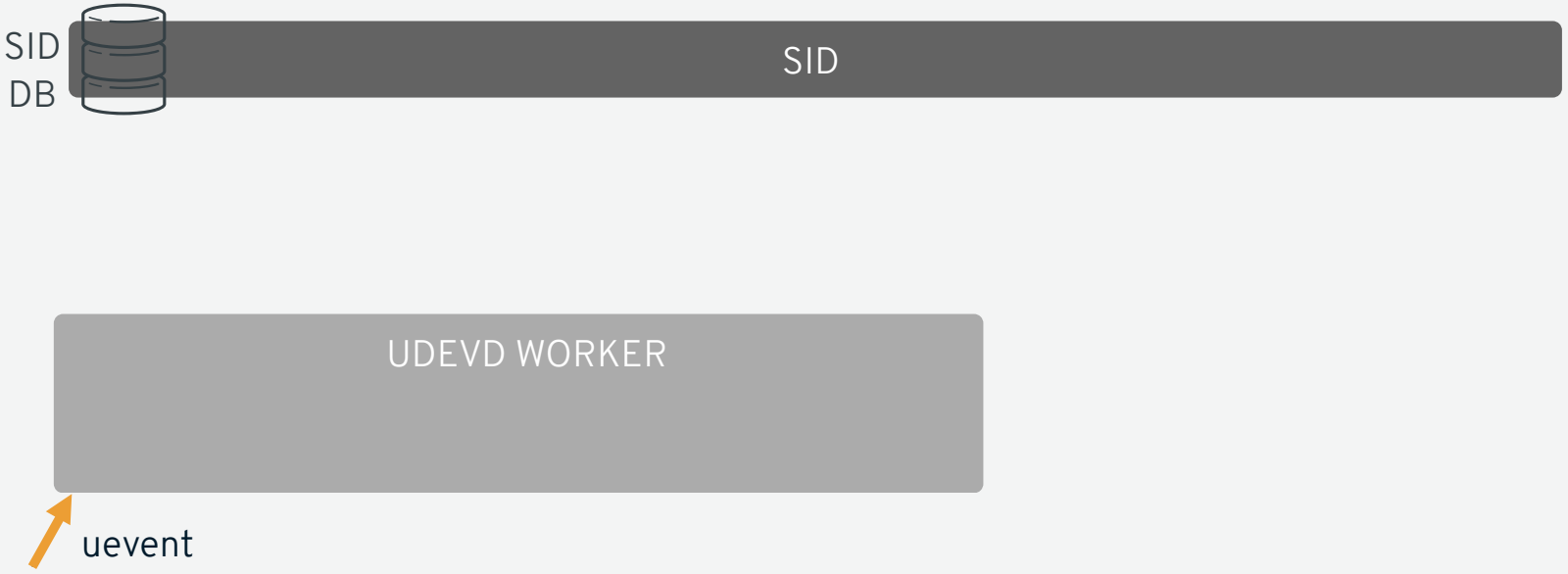
STORAGE INSTANTIATION

DAEMON IDENTIFY STAGES

UDEVD WORKER

STORAGE INSTANTIATION

DAEMON IDENTIFY STAGES



STORAGE INSTANTIATION

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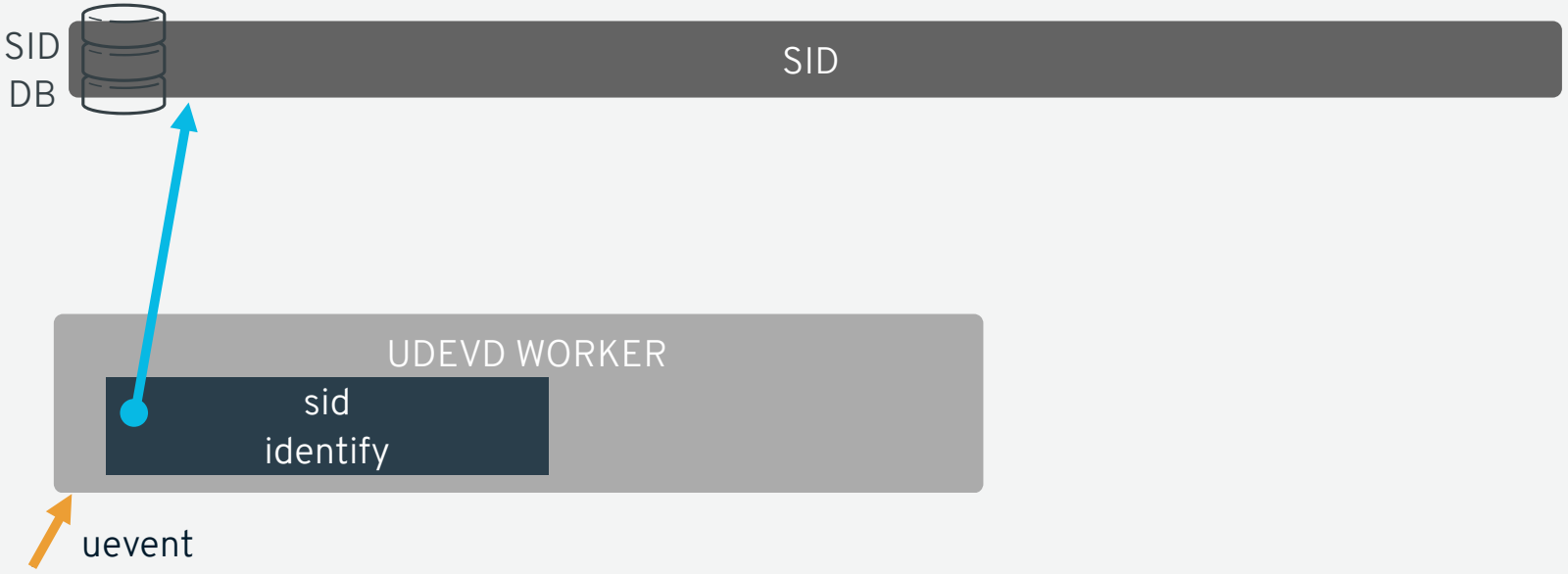

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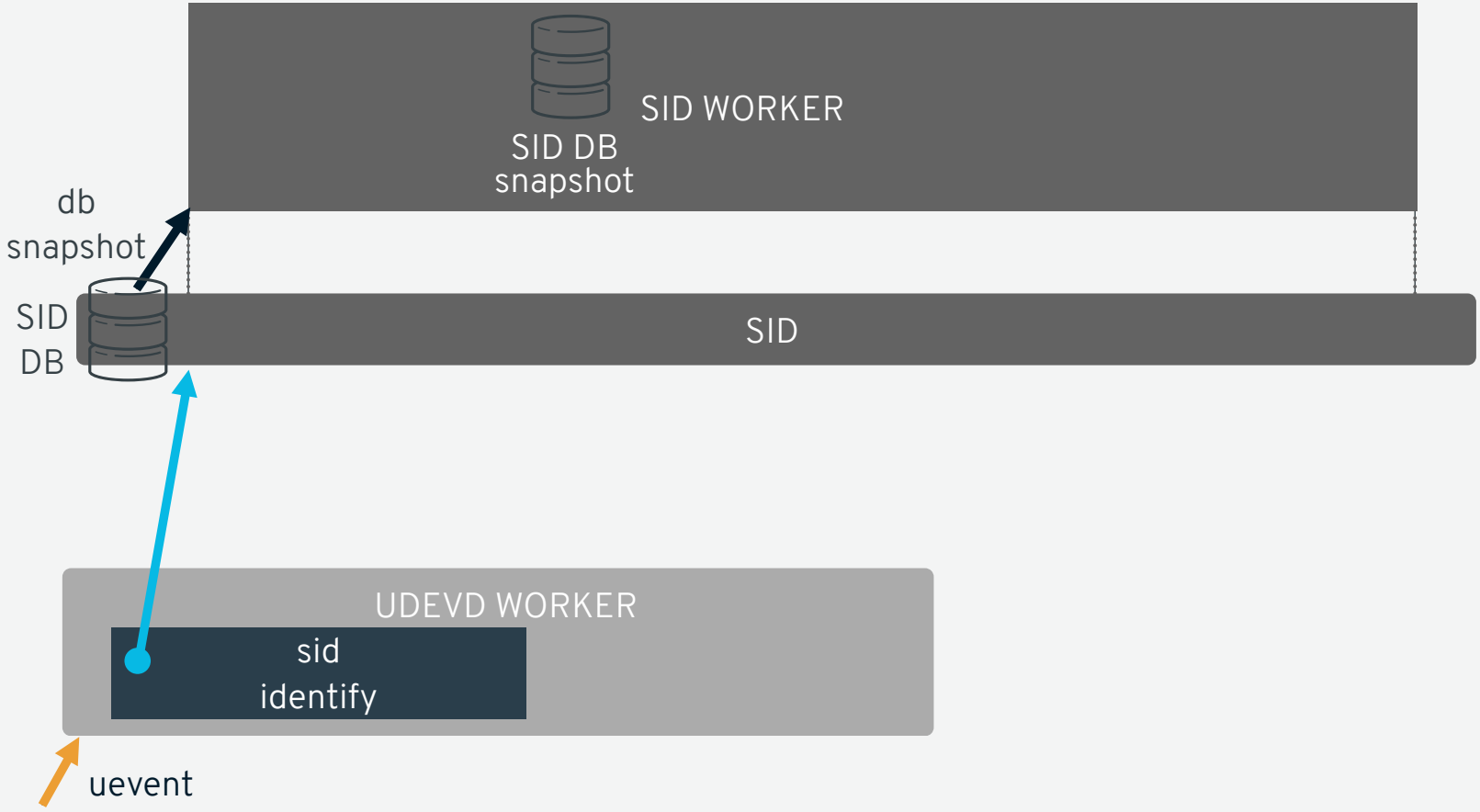

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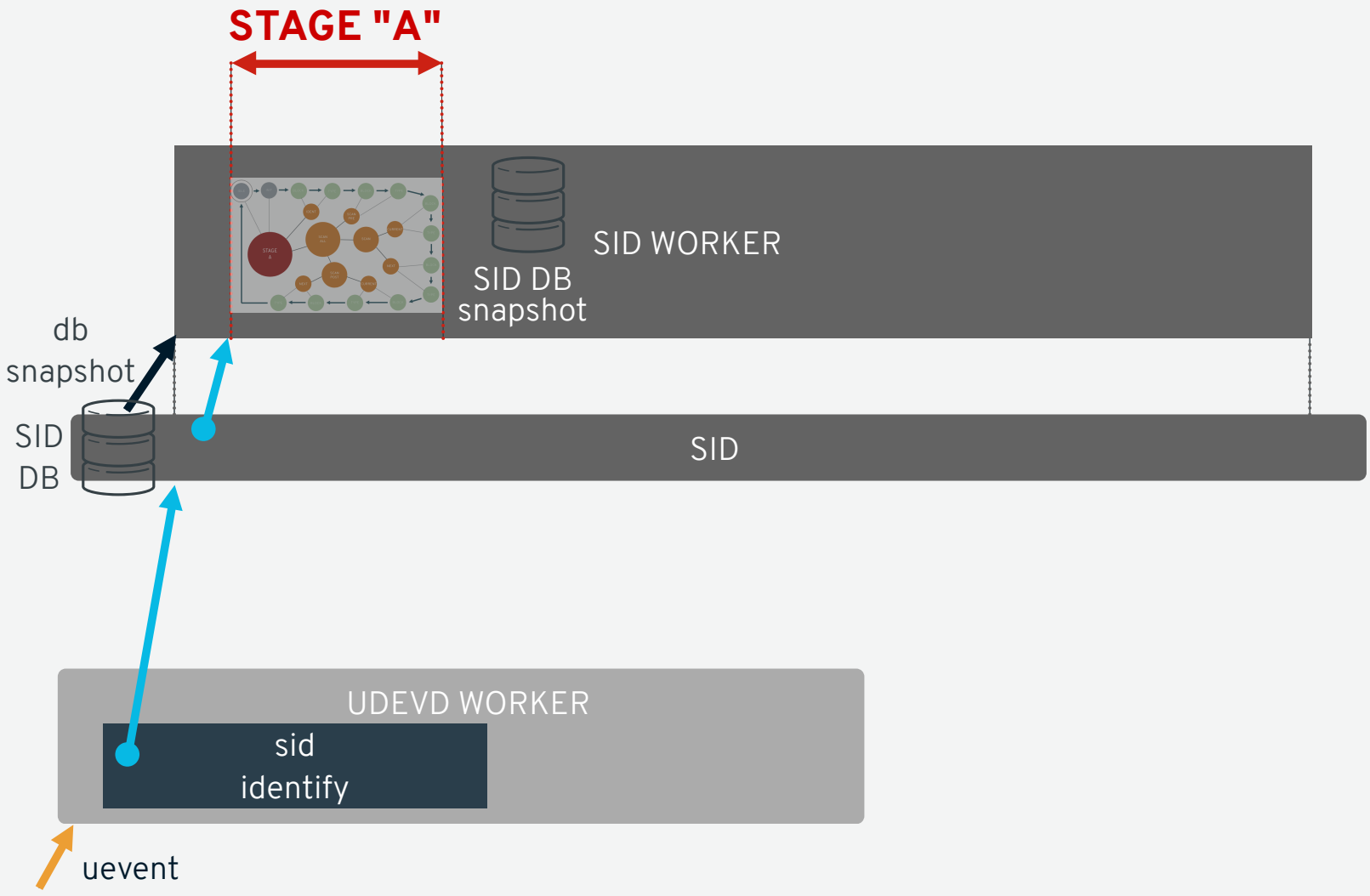

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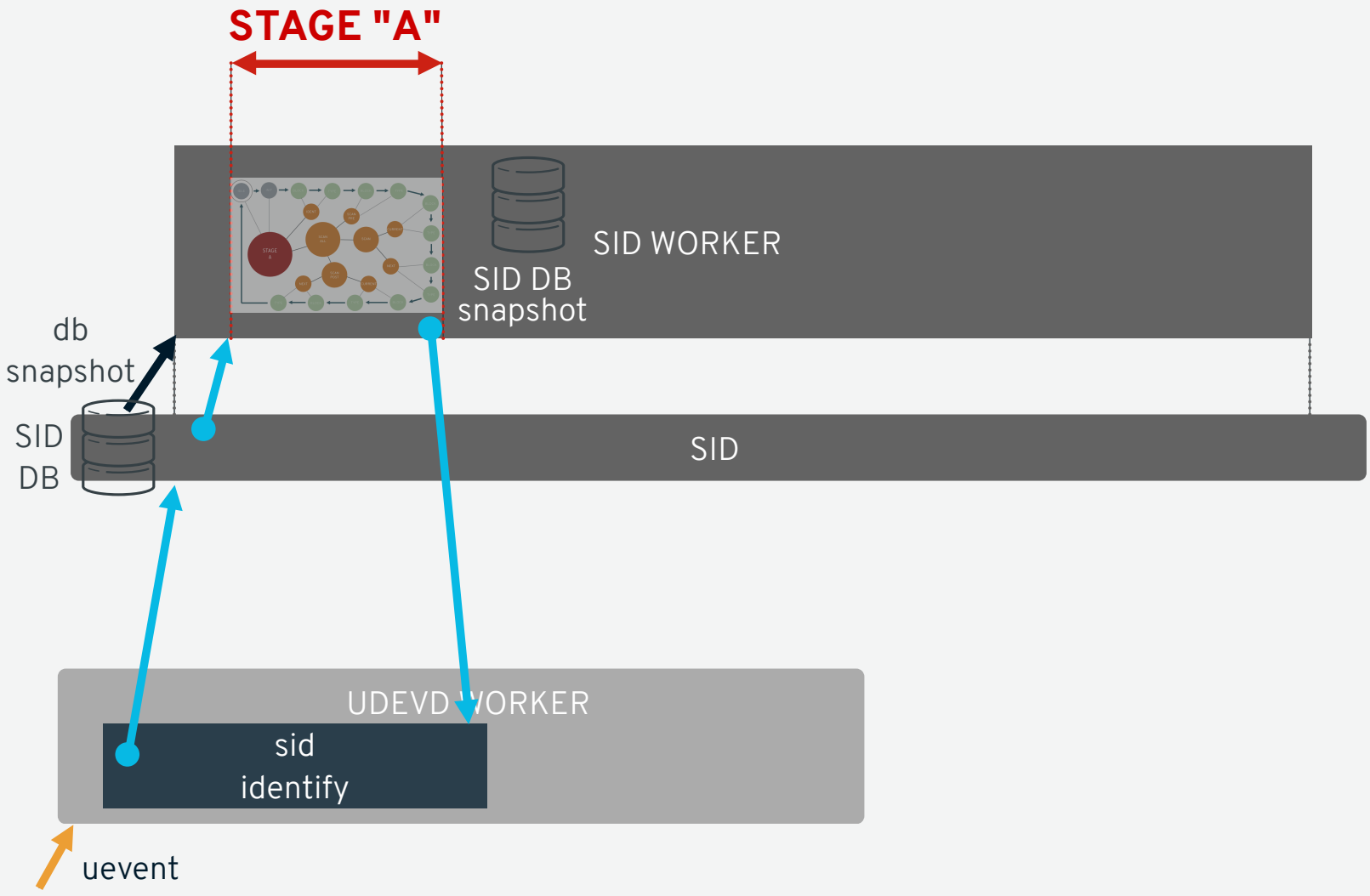

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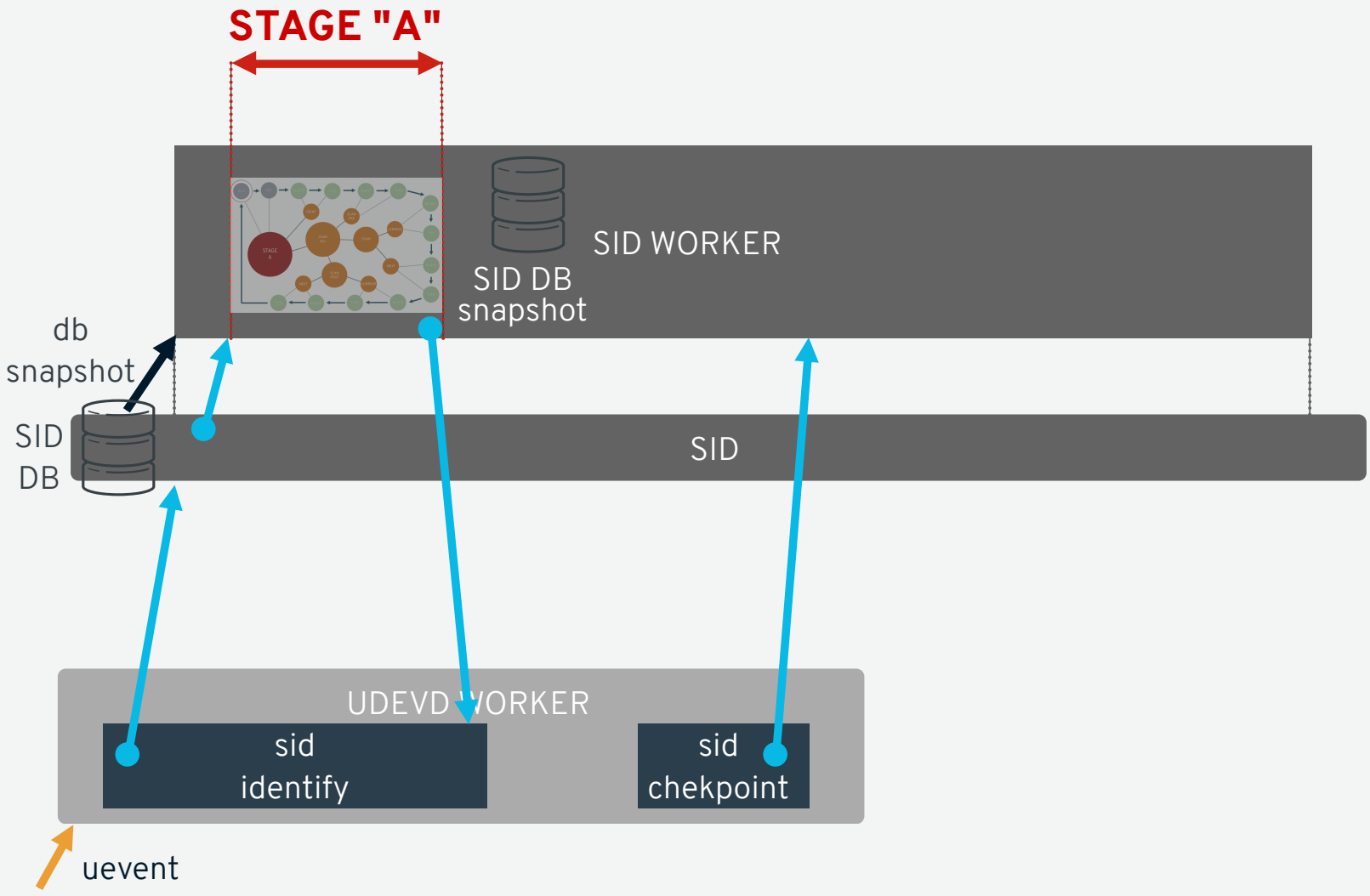

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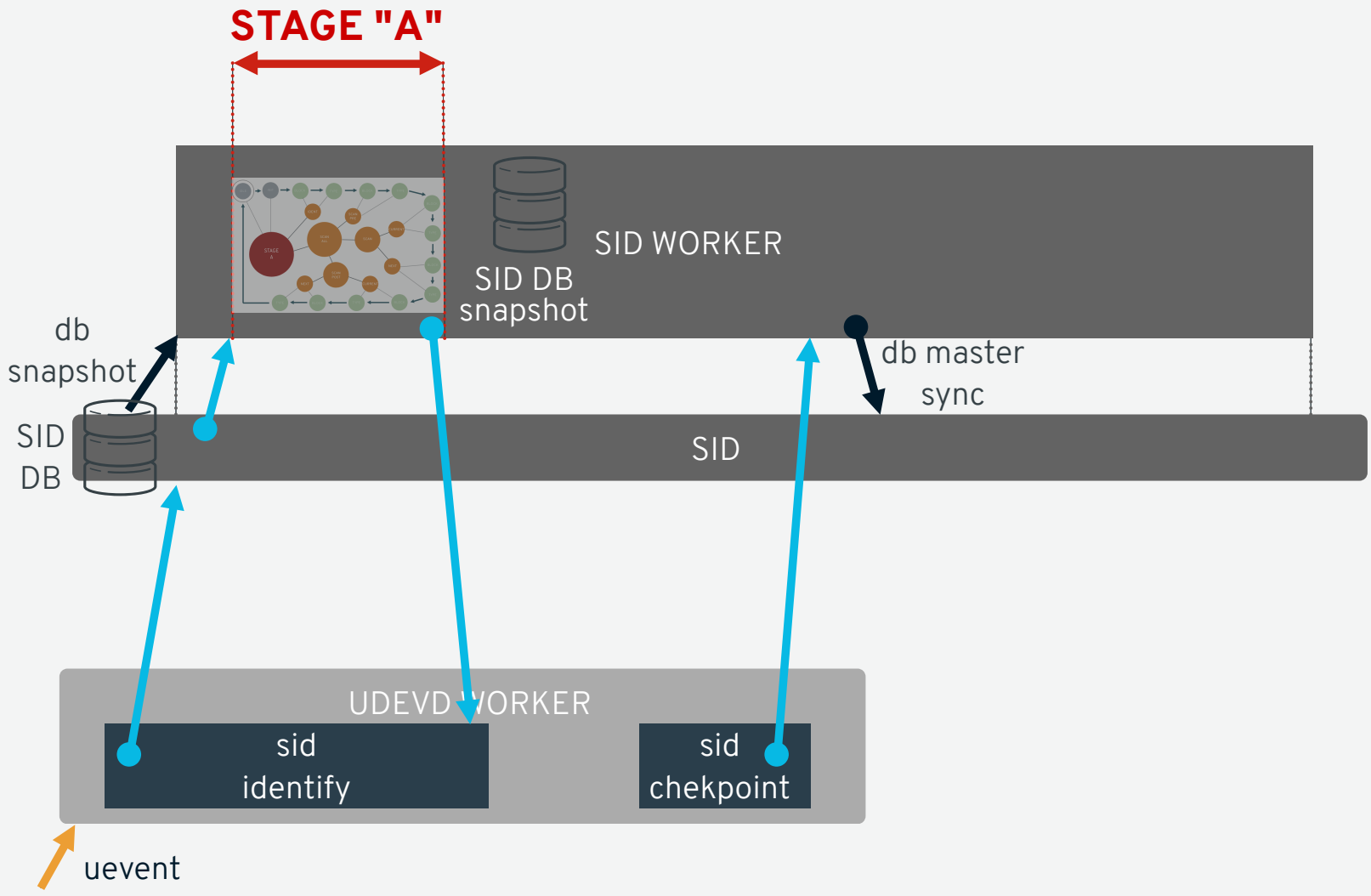

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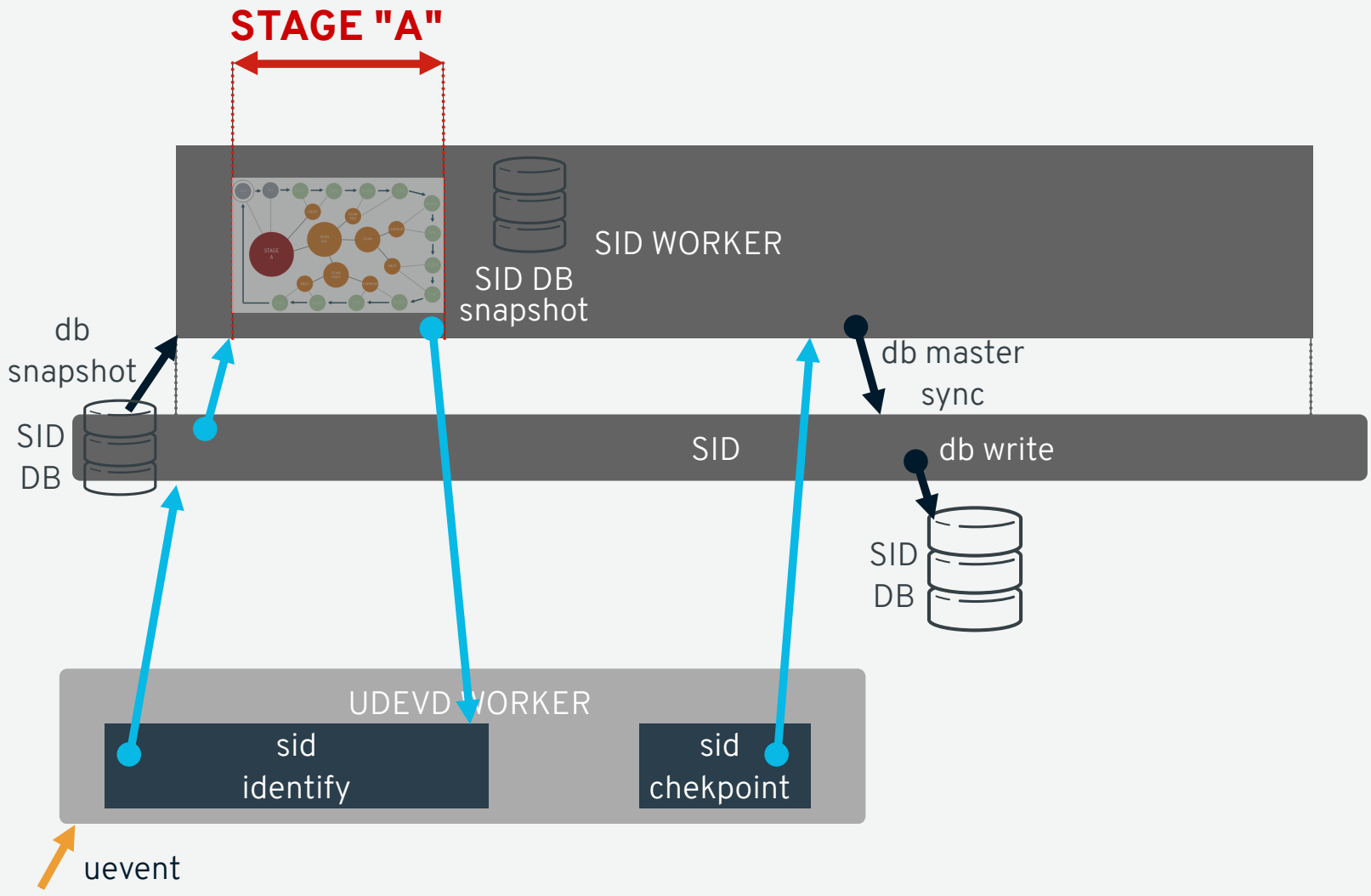

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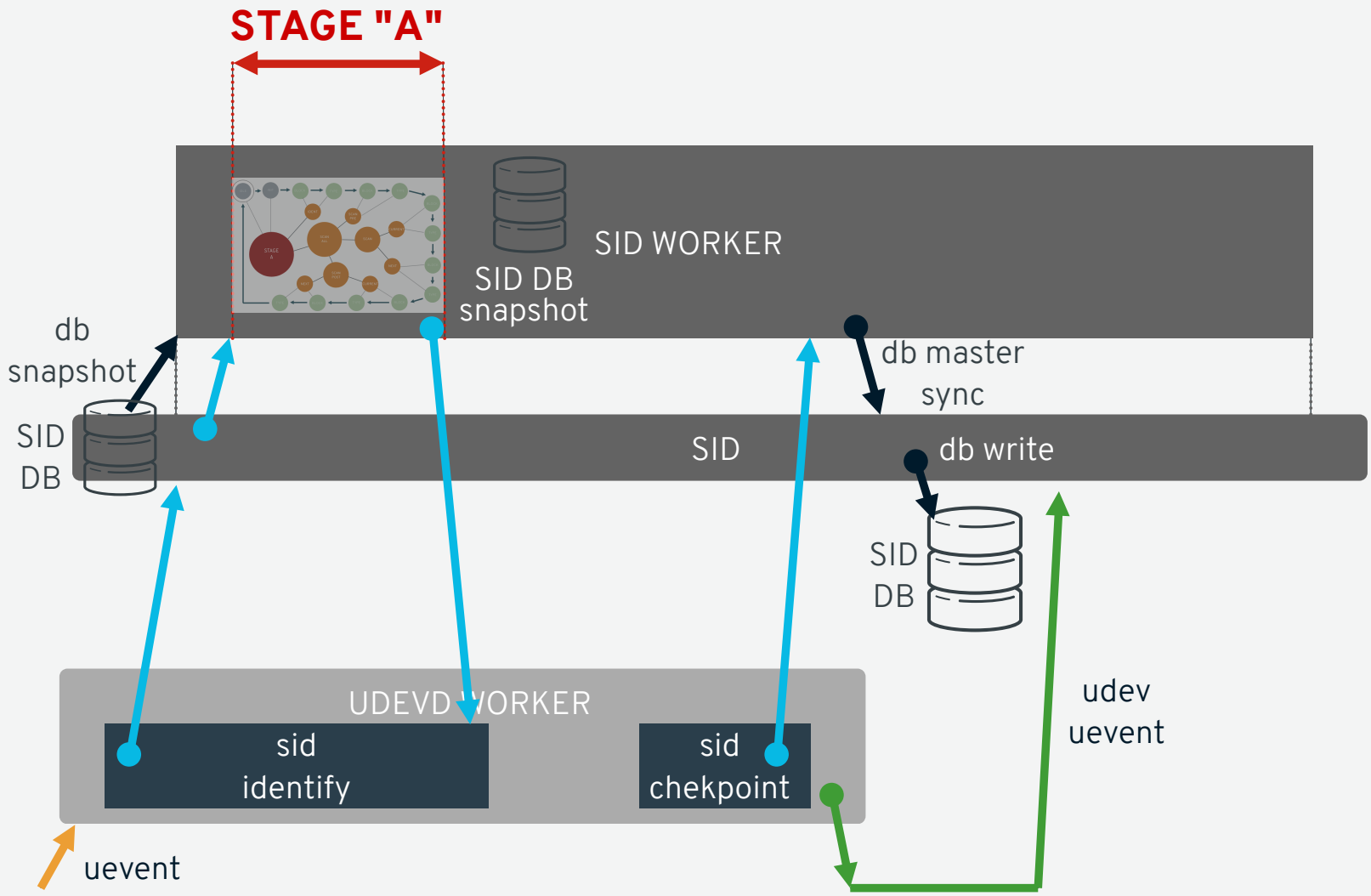

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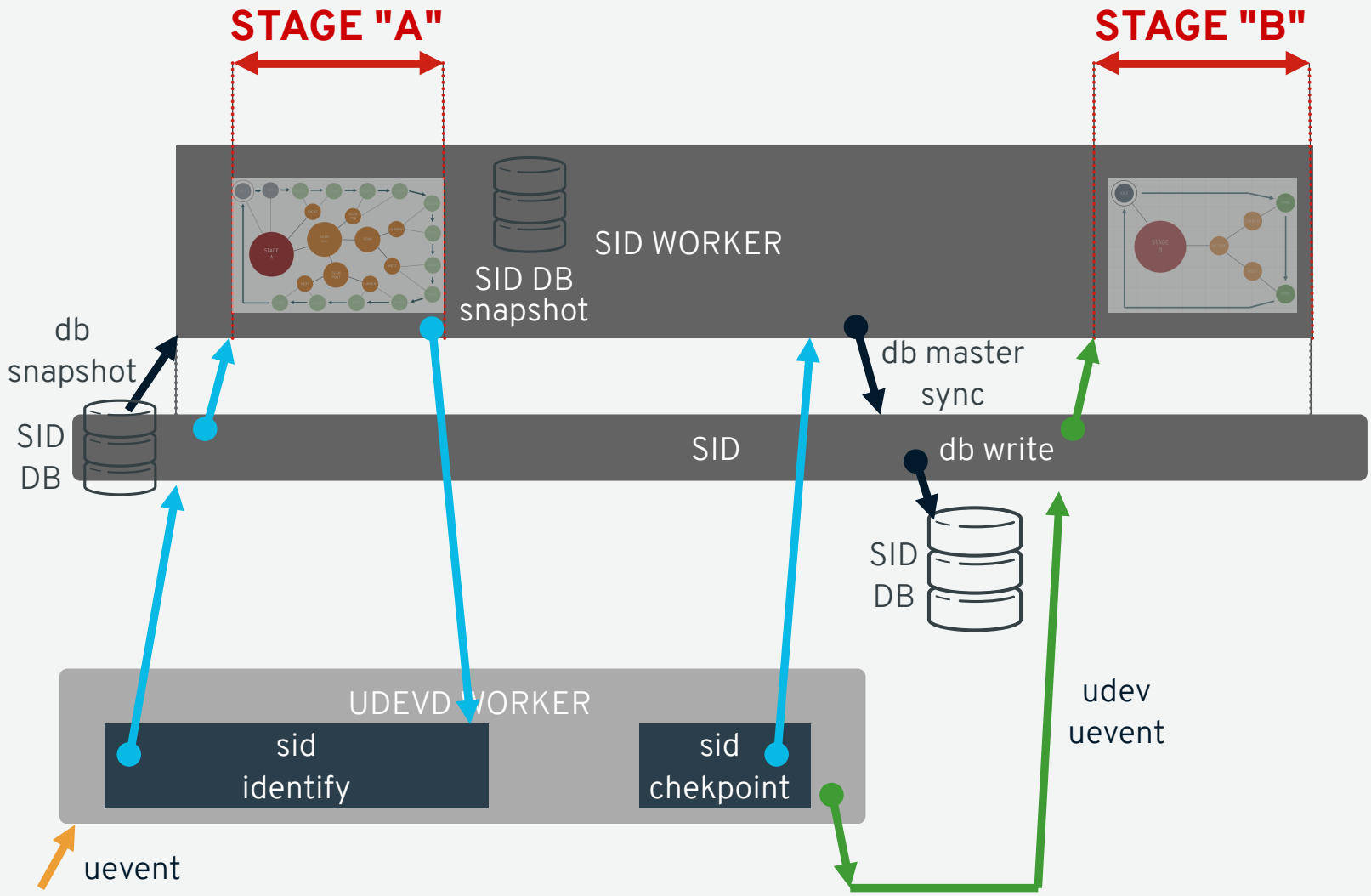

SID DAEMON

IDENTIFY - STAGE "A"

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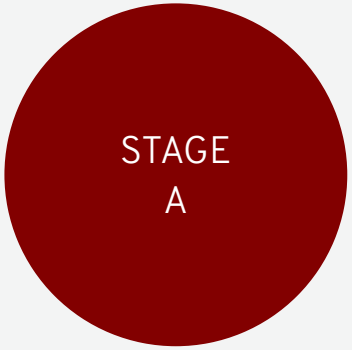

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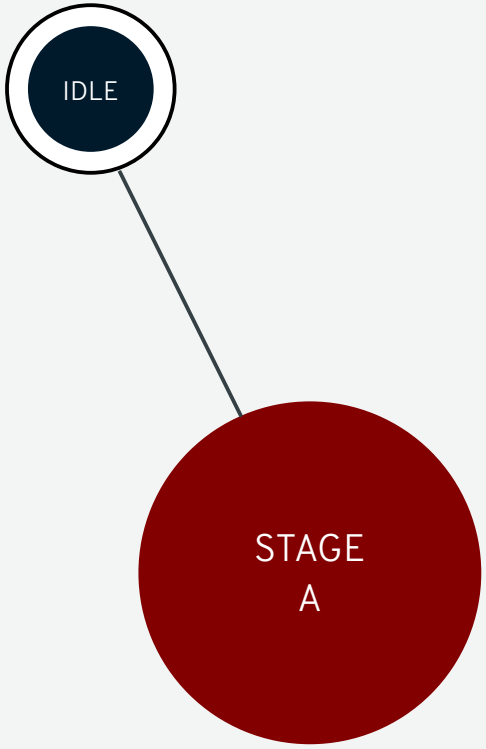

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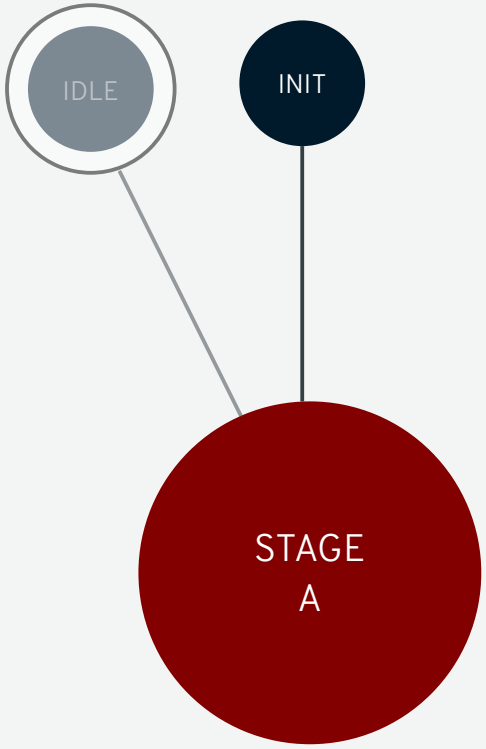

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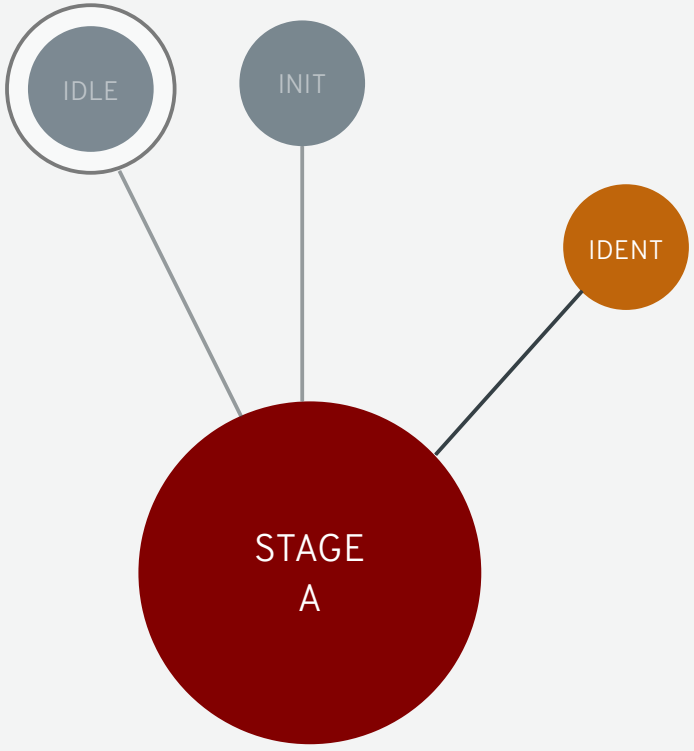

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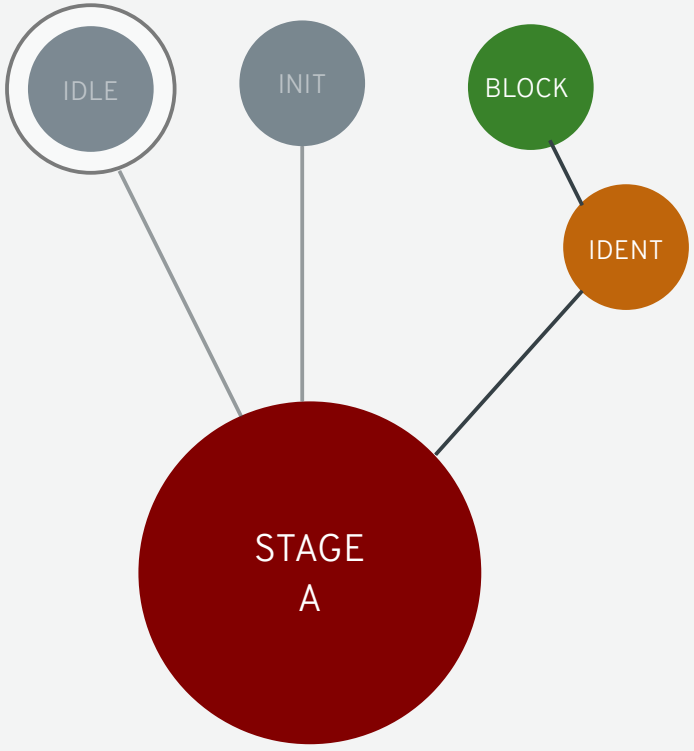

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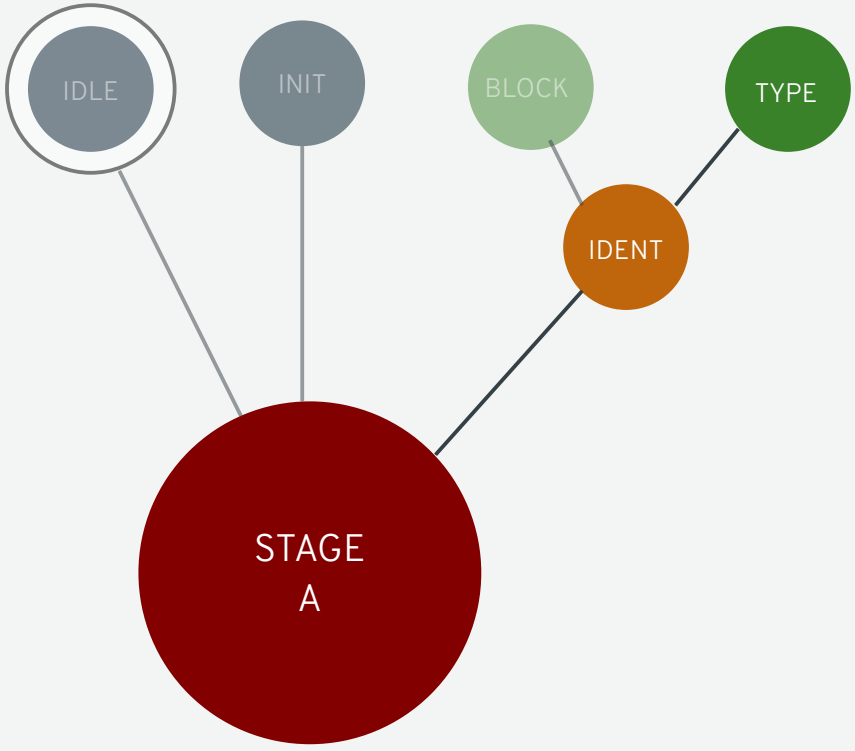

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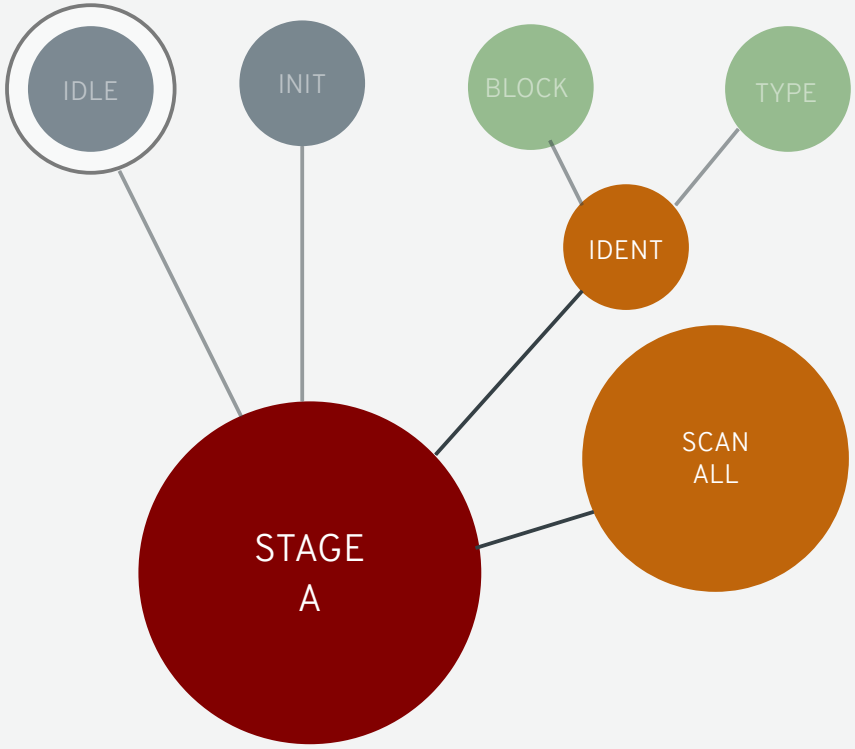

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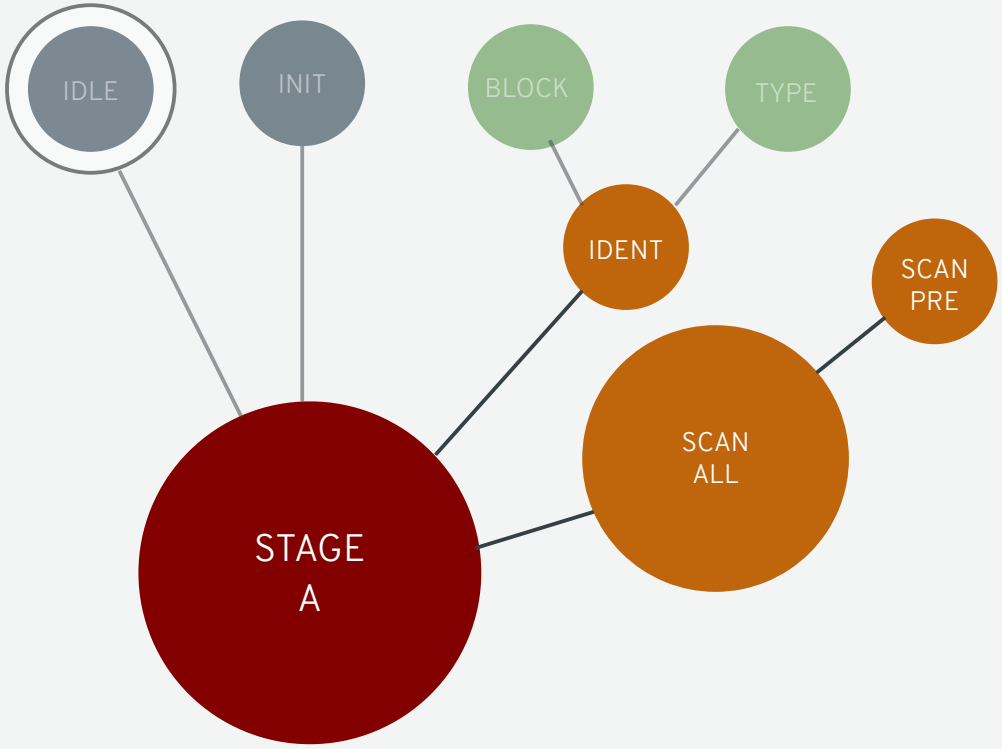

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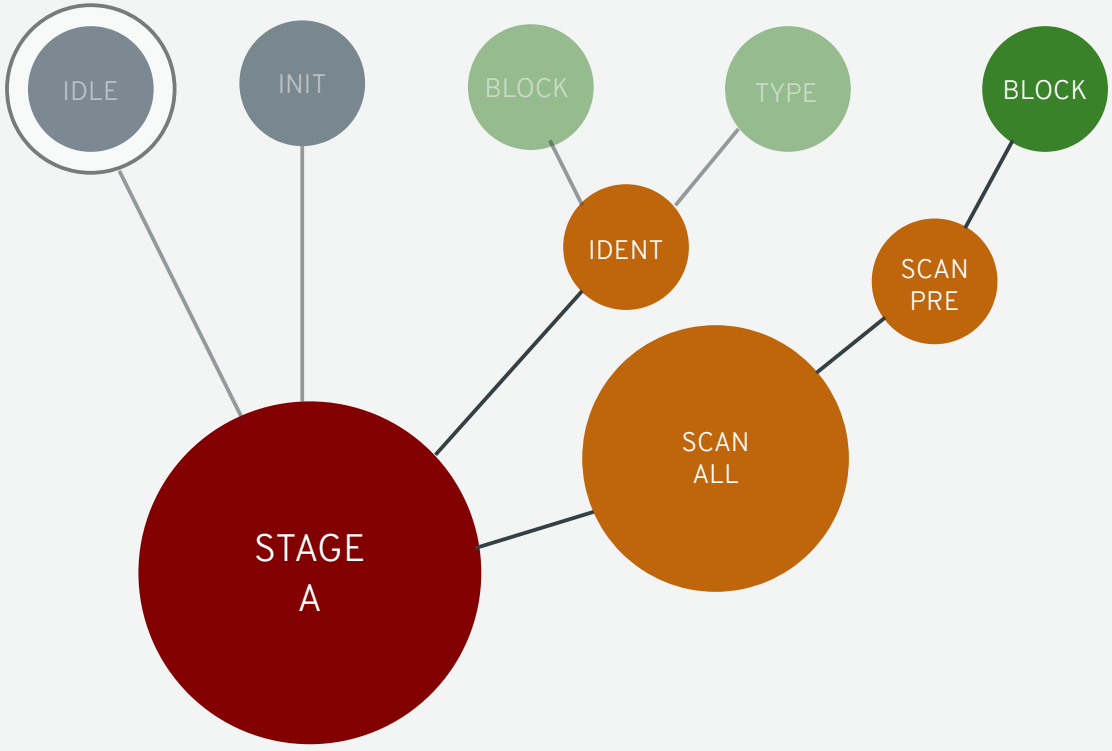

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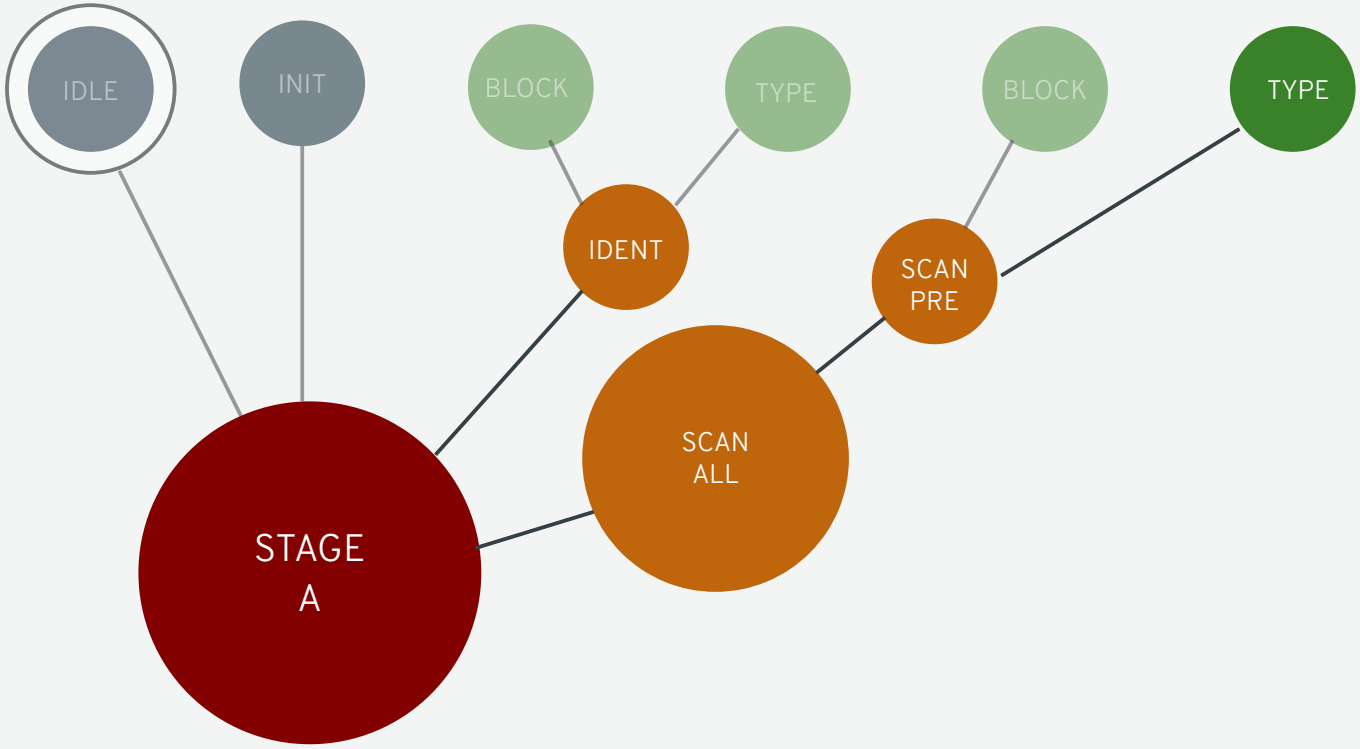

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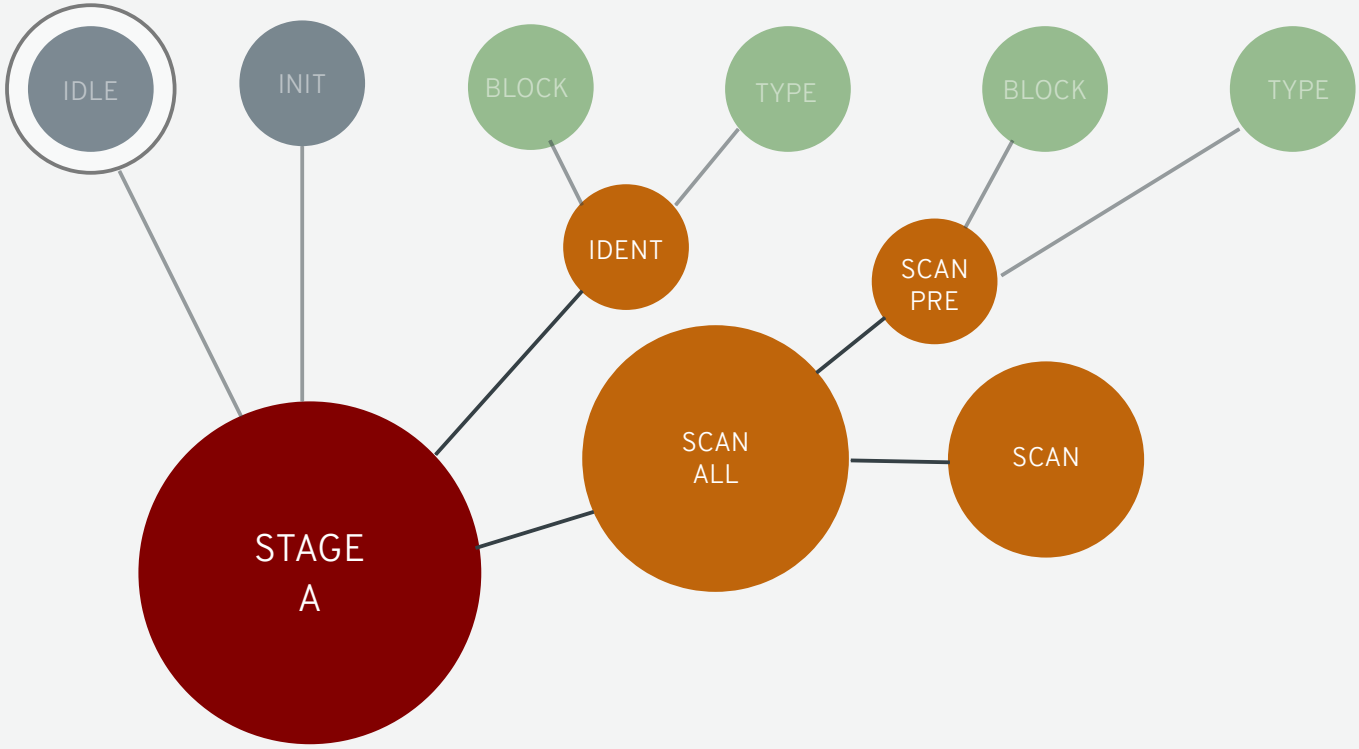

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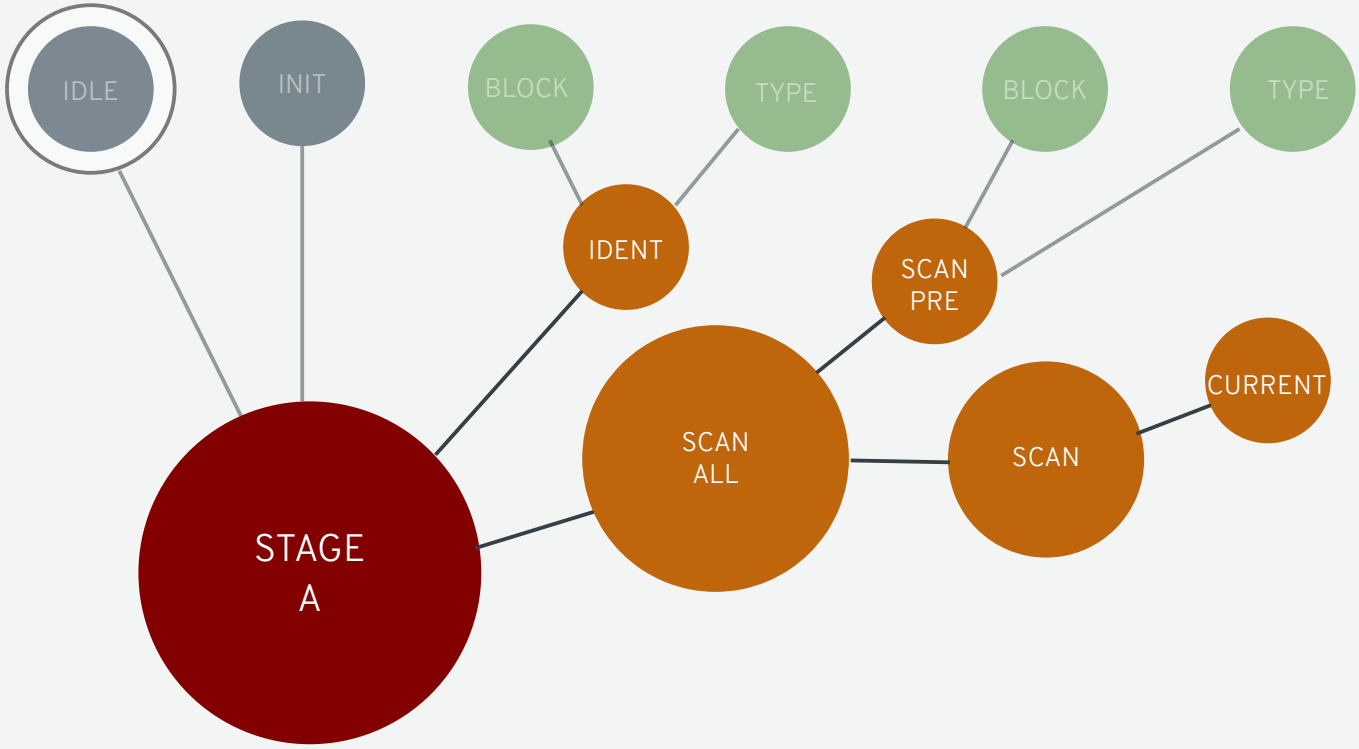

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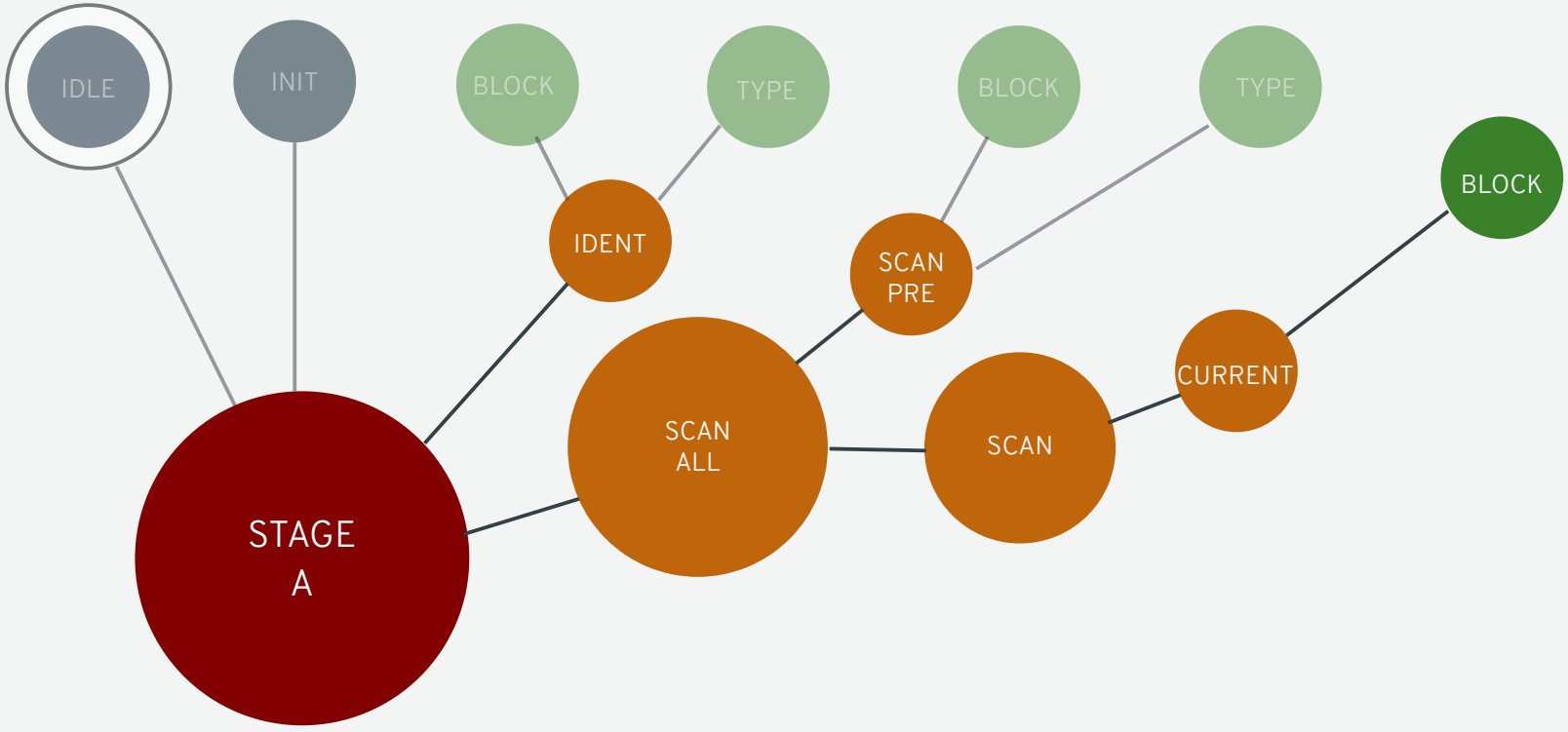

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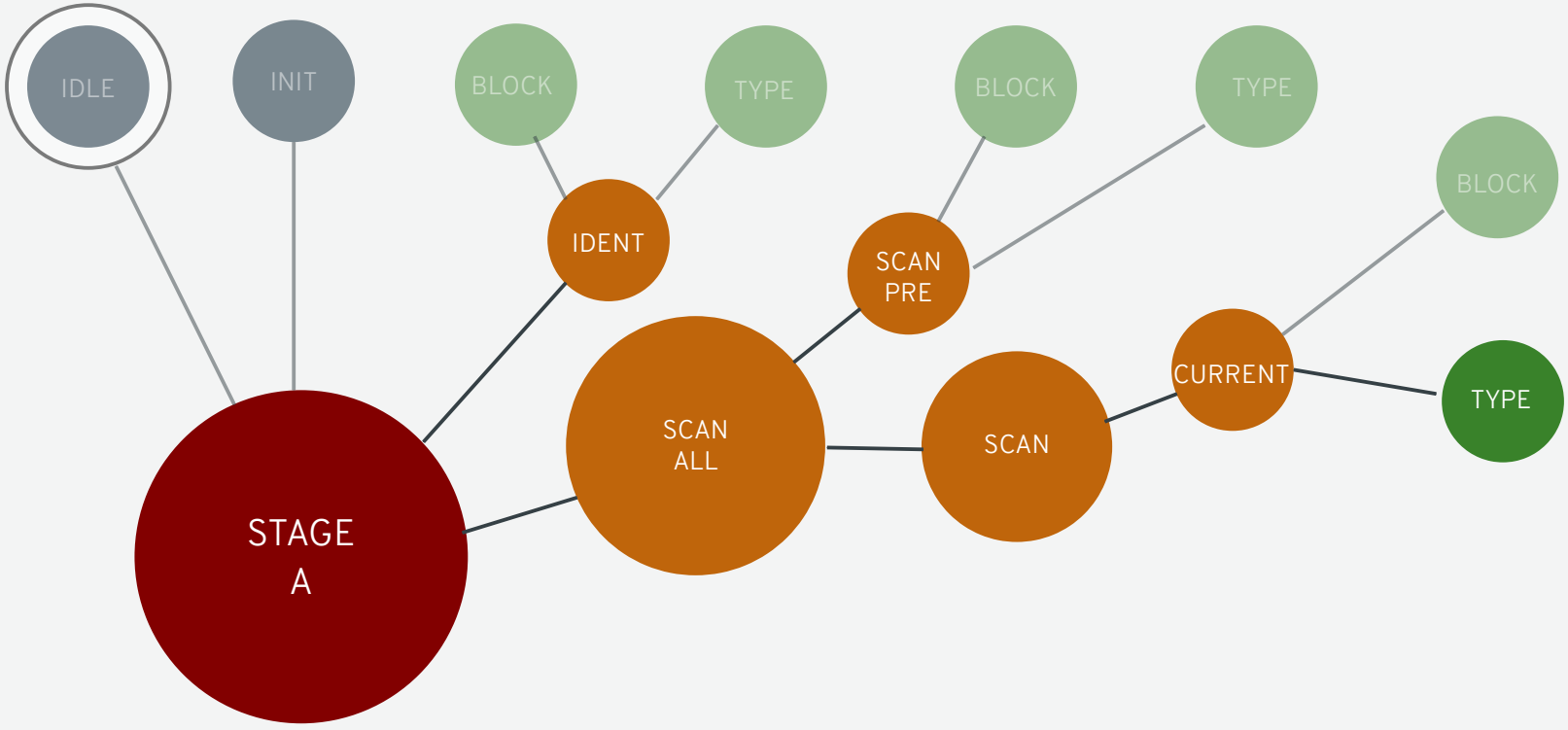

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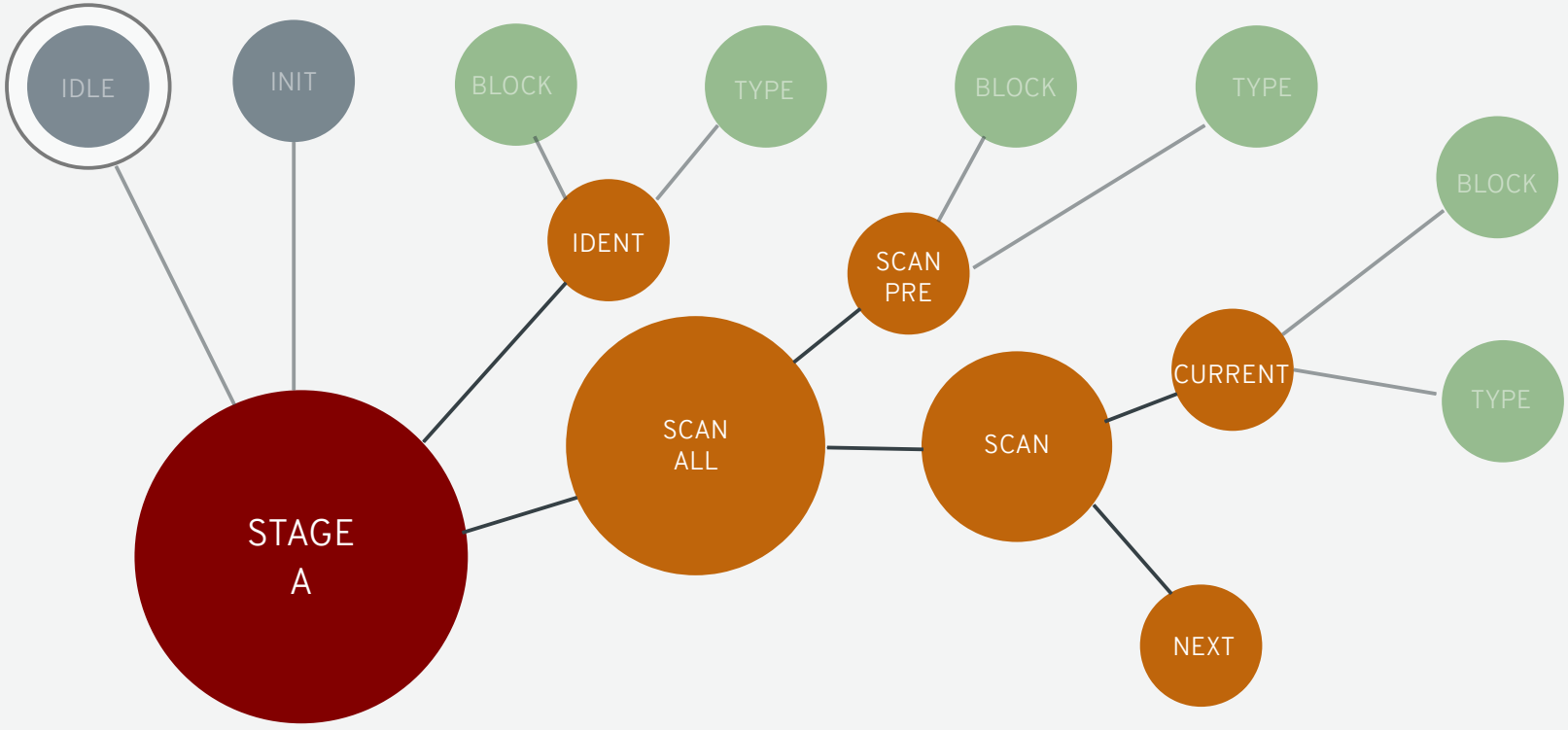

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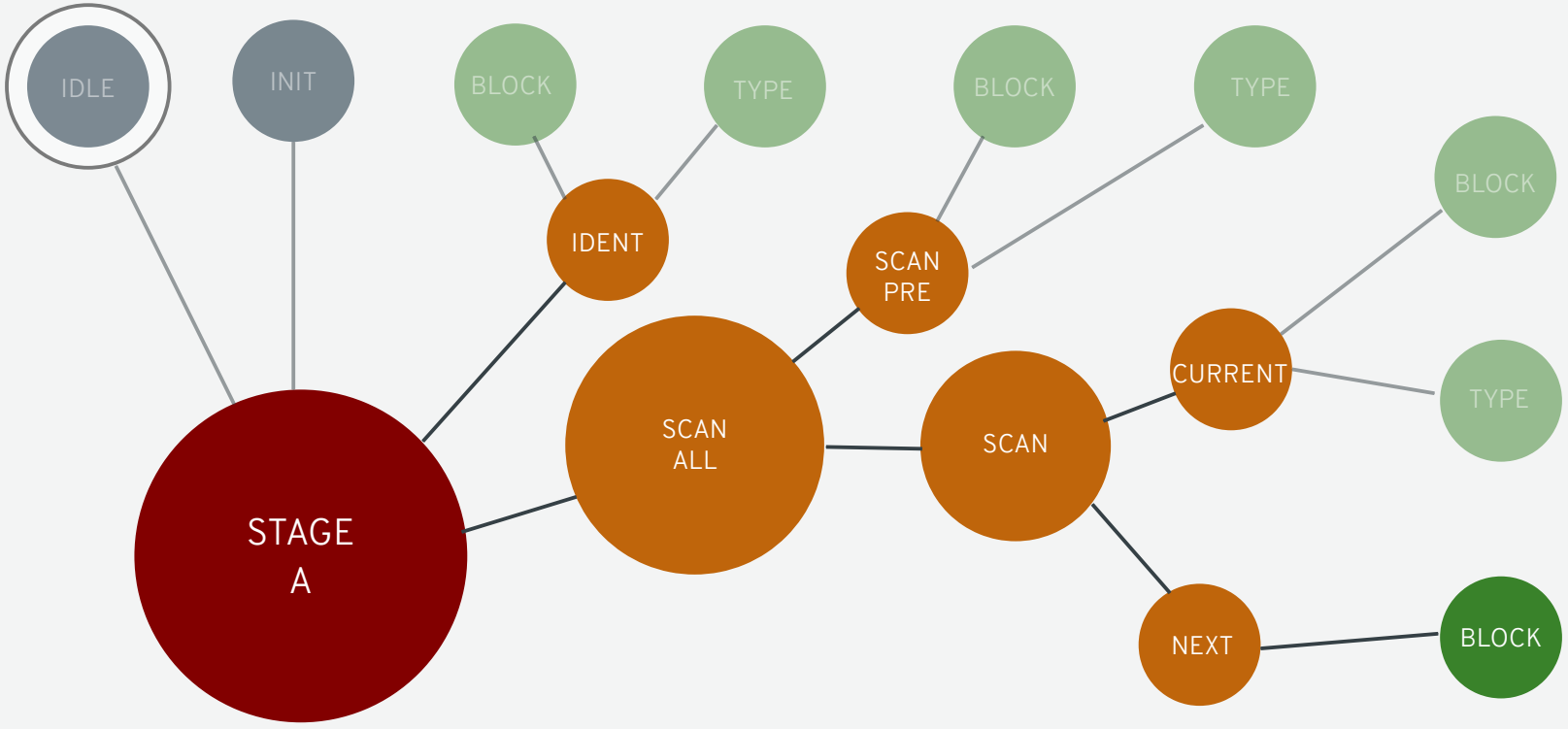

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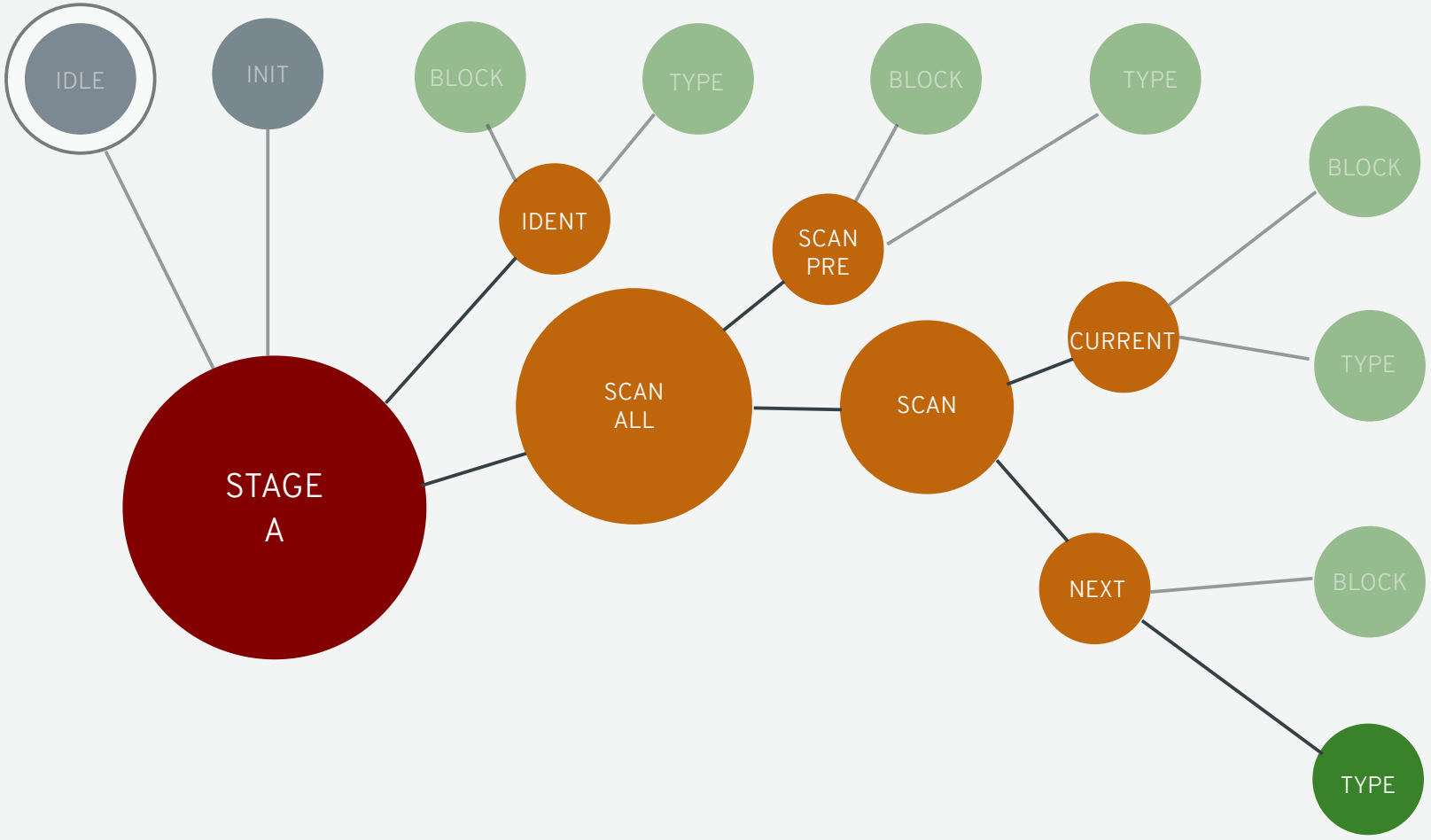

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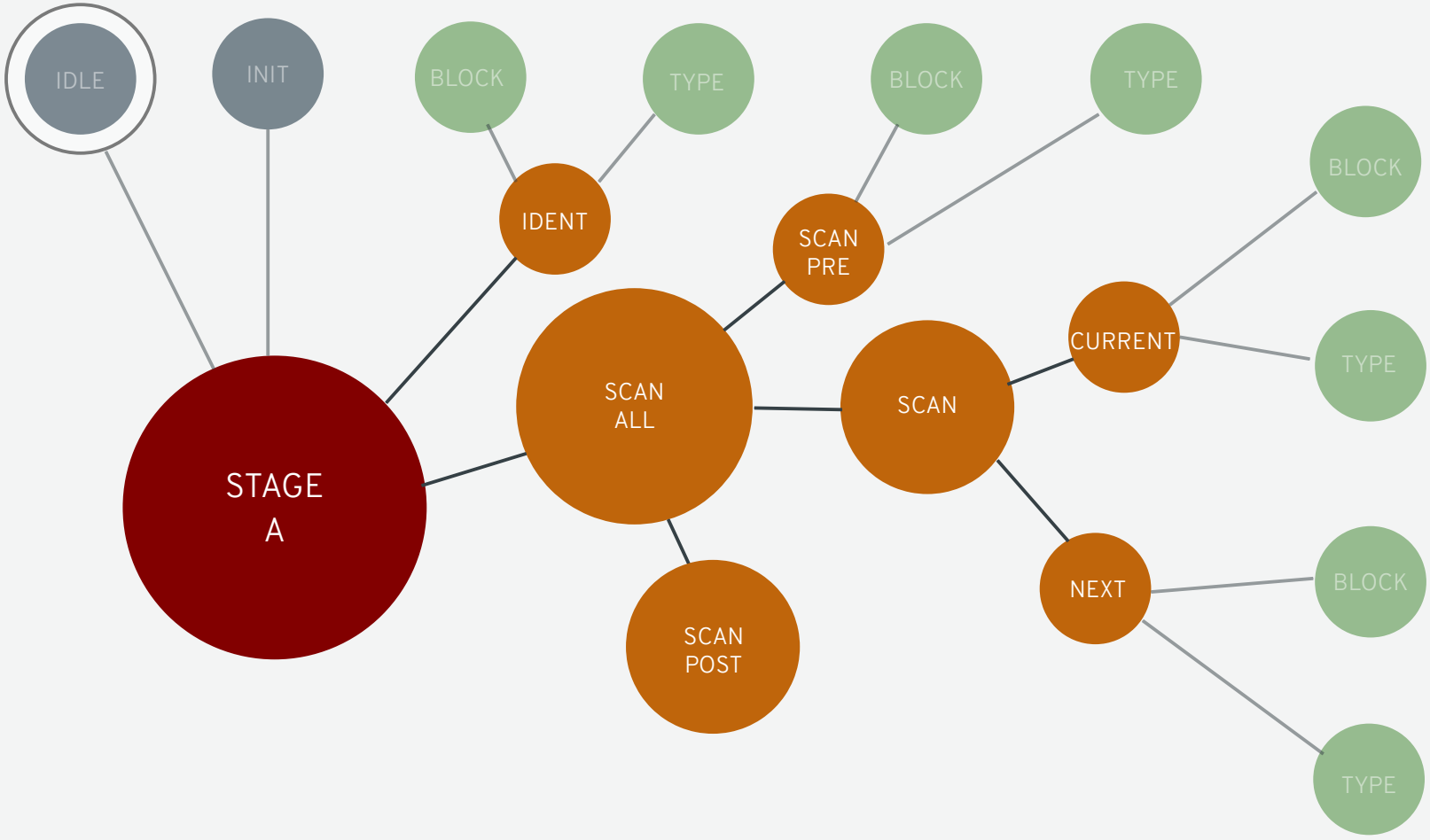

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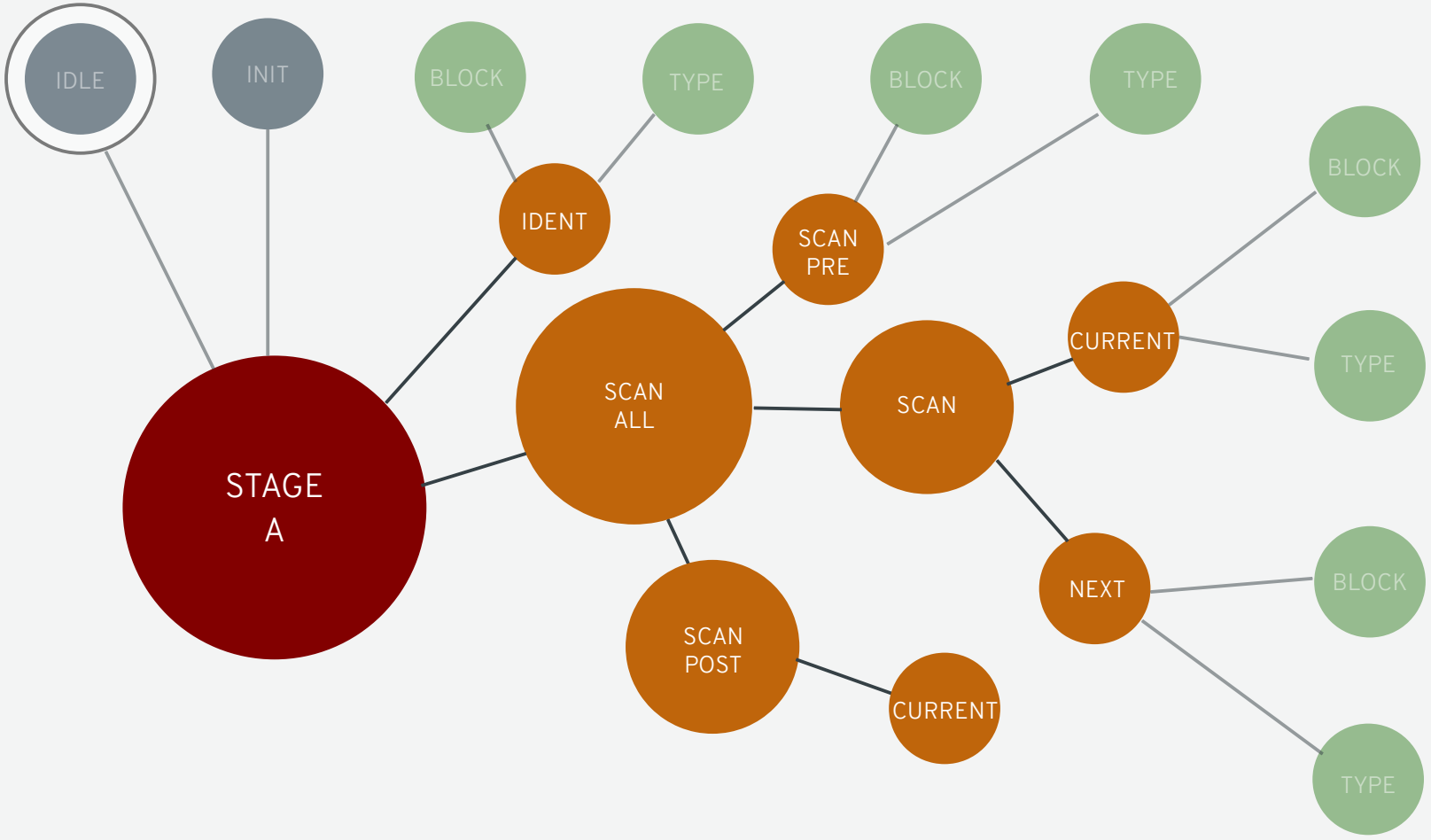

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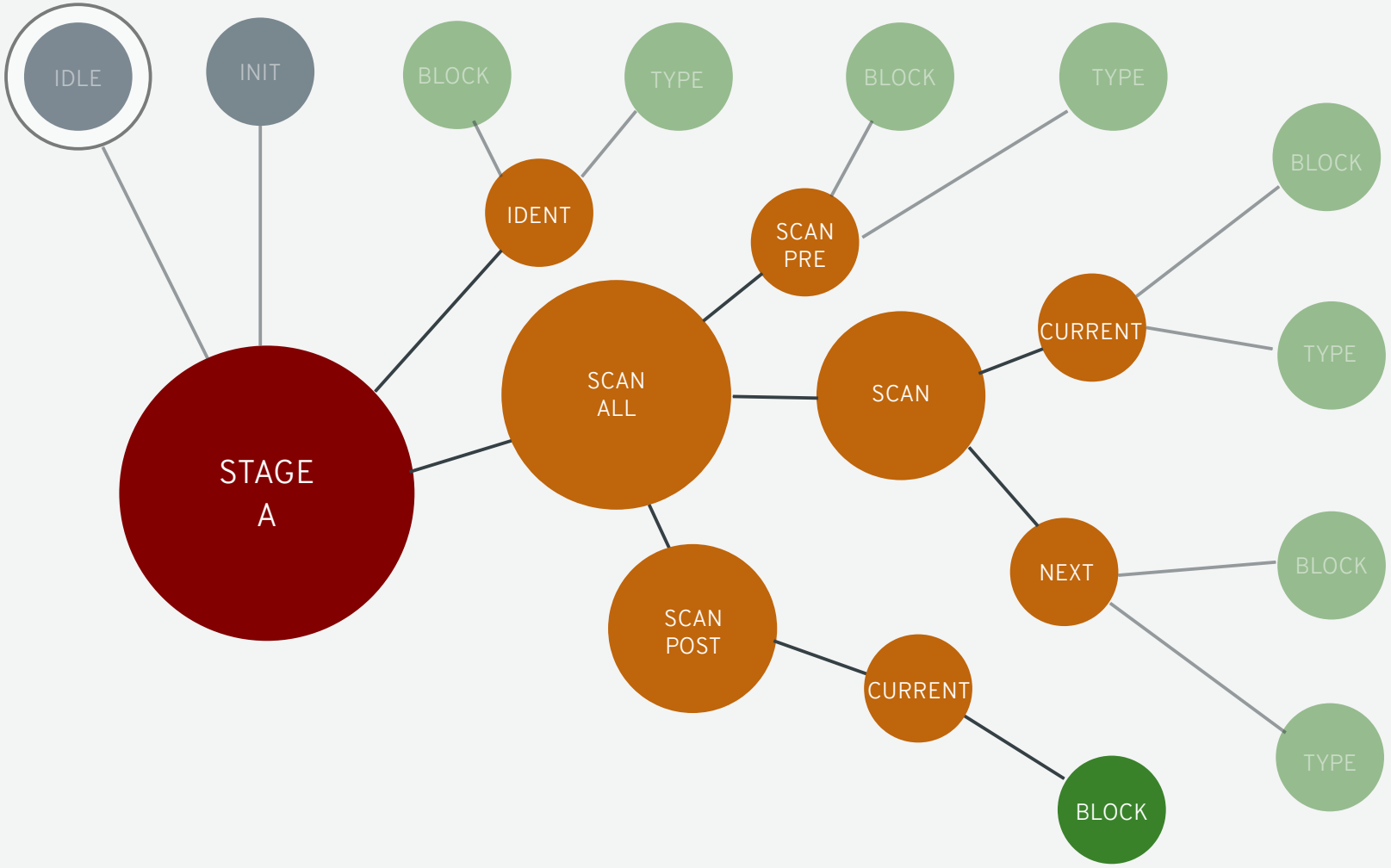

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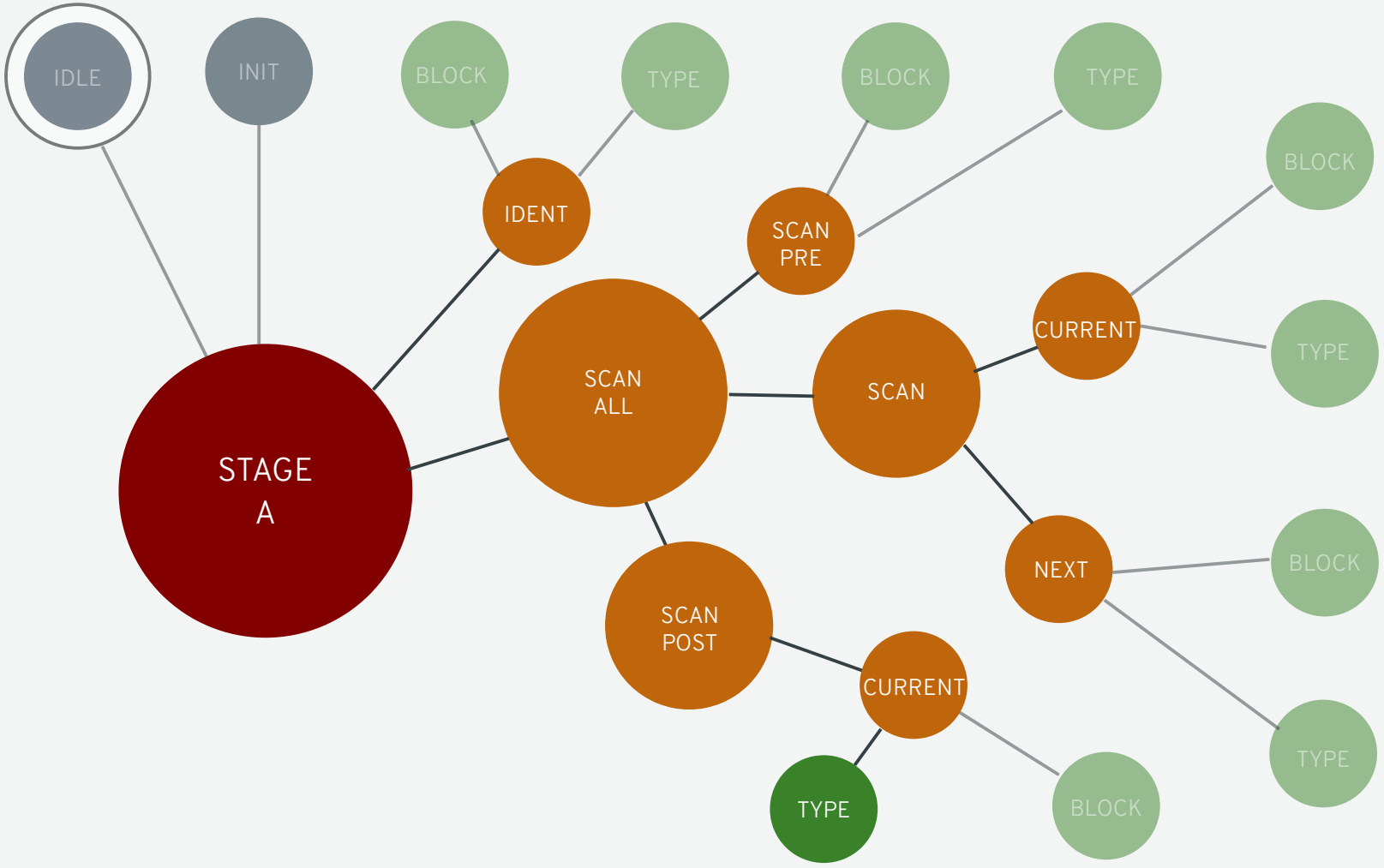

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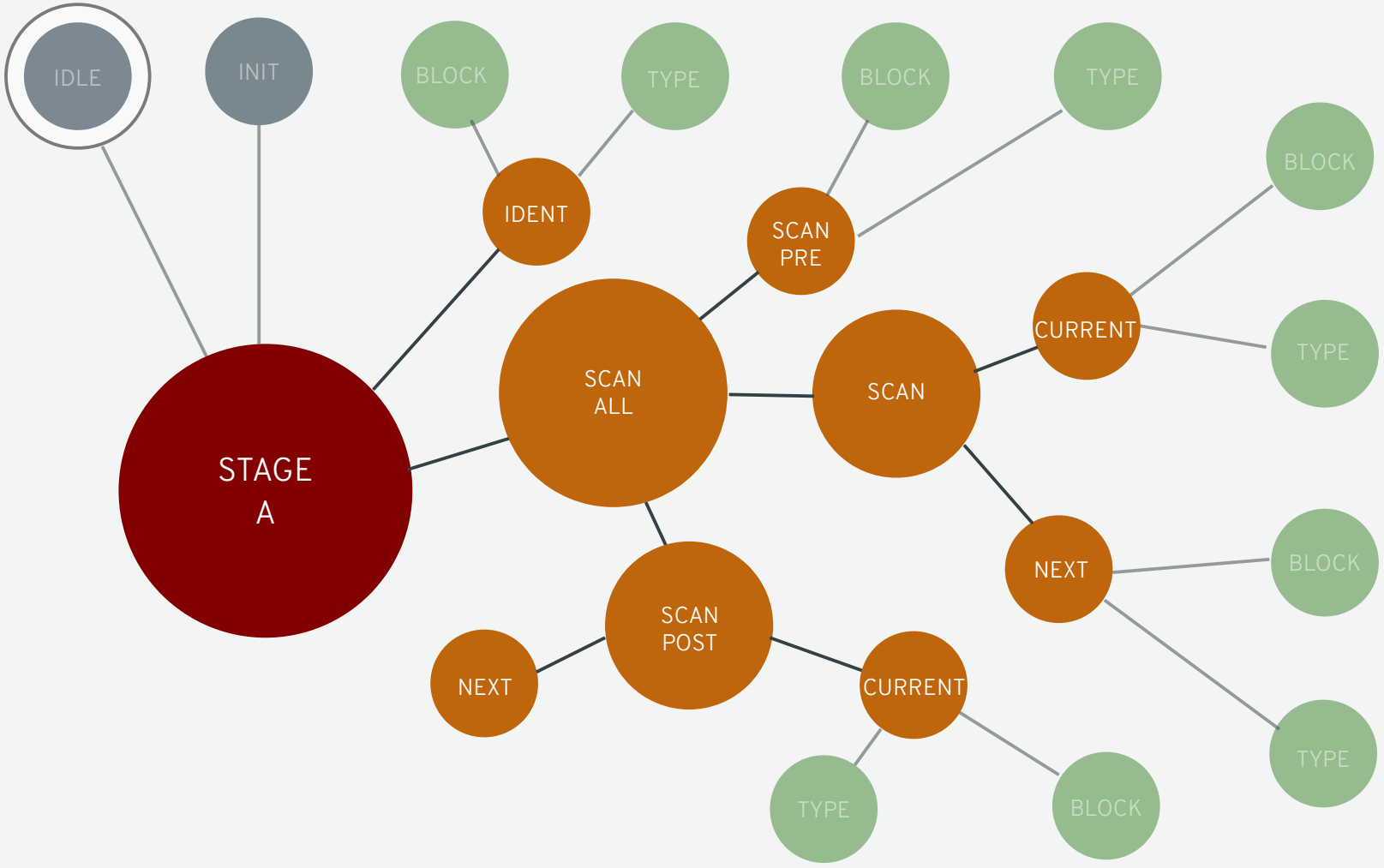

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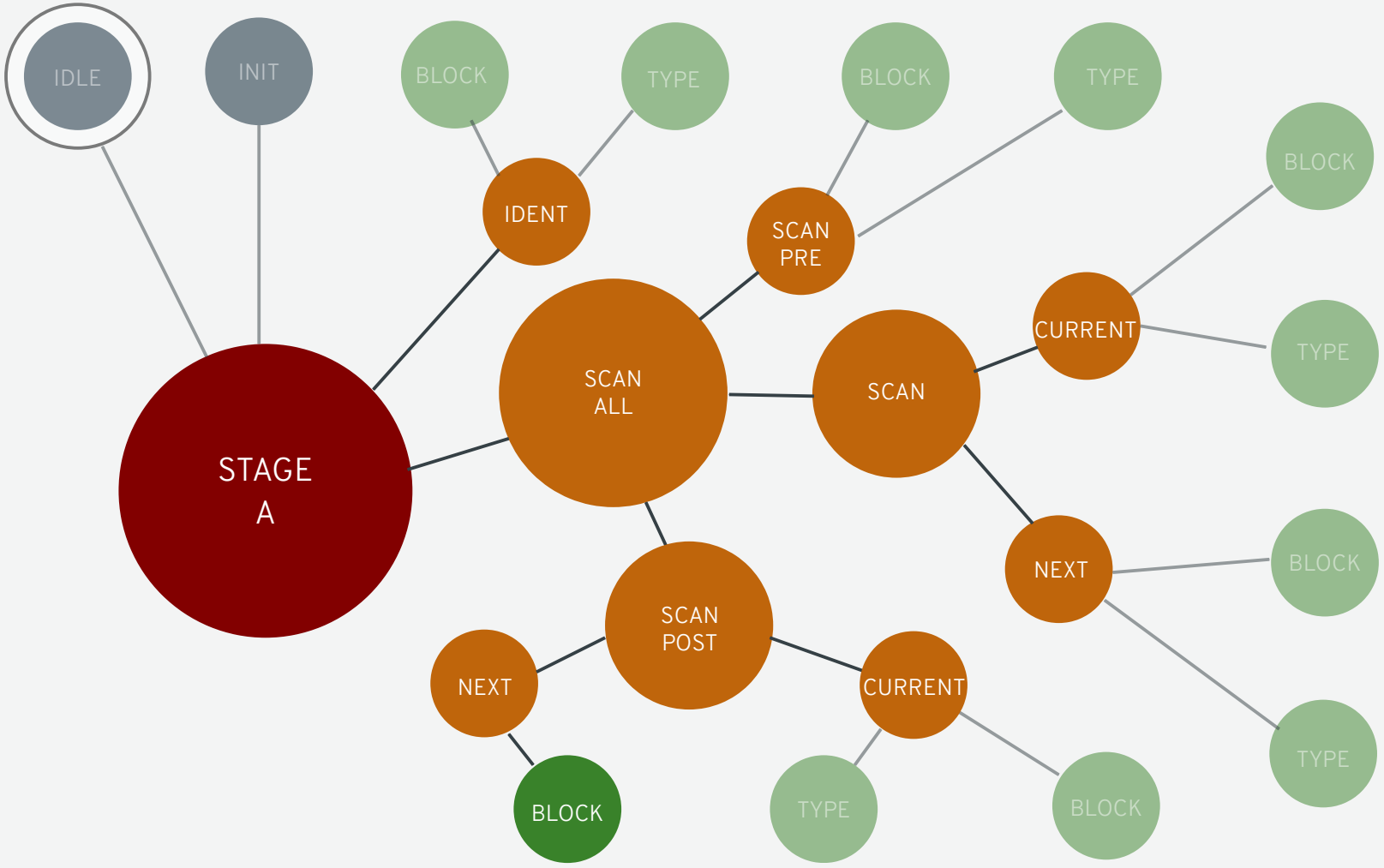

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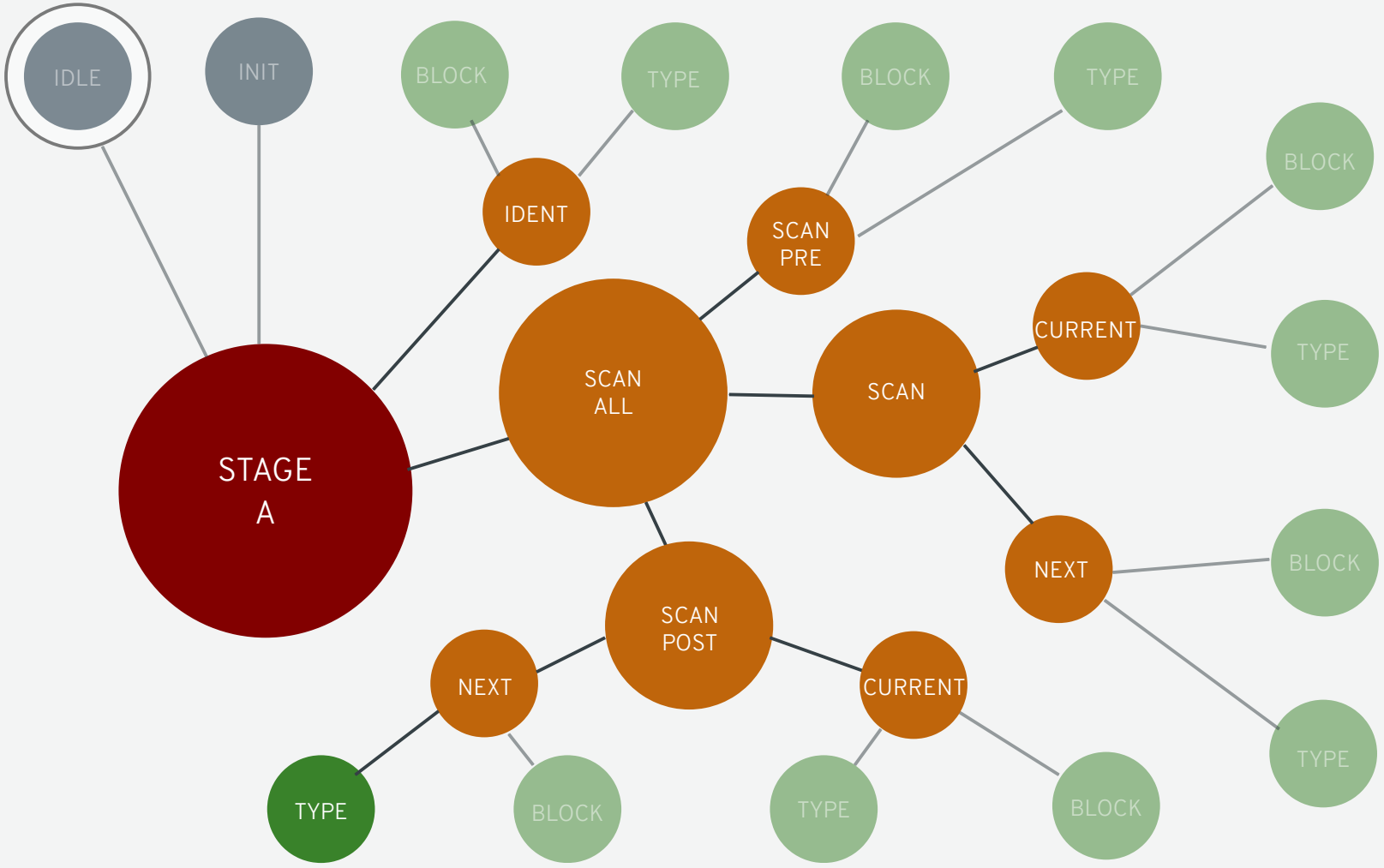

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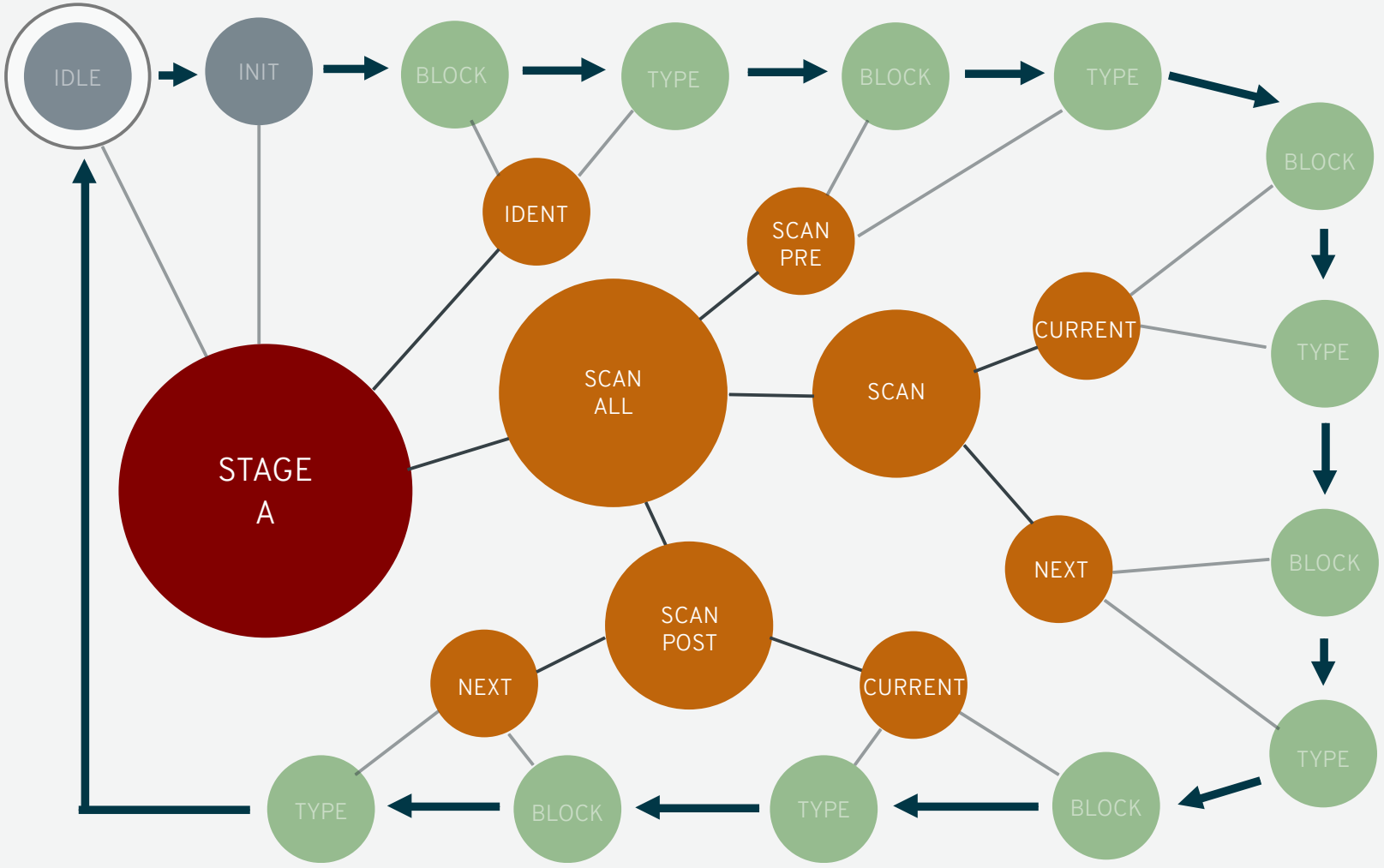

SID DAEMON

IDENTIFY - STAGE "B

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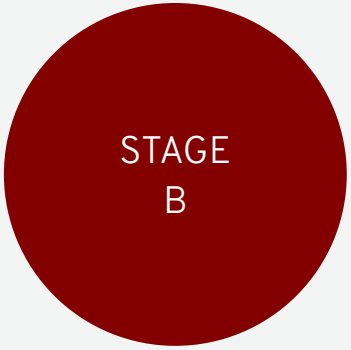

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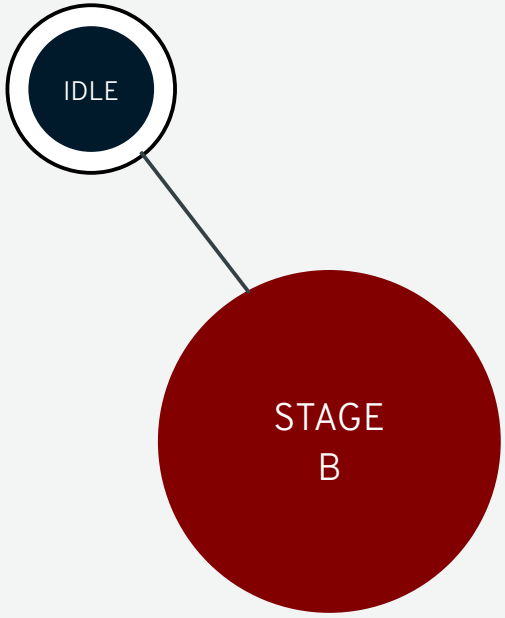

SID DAEMON

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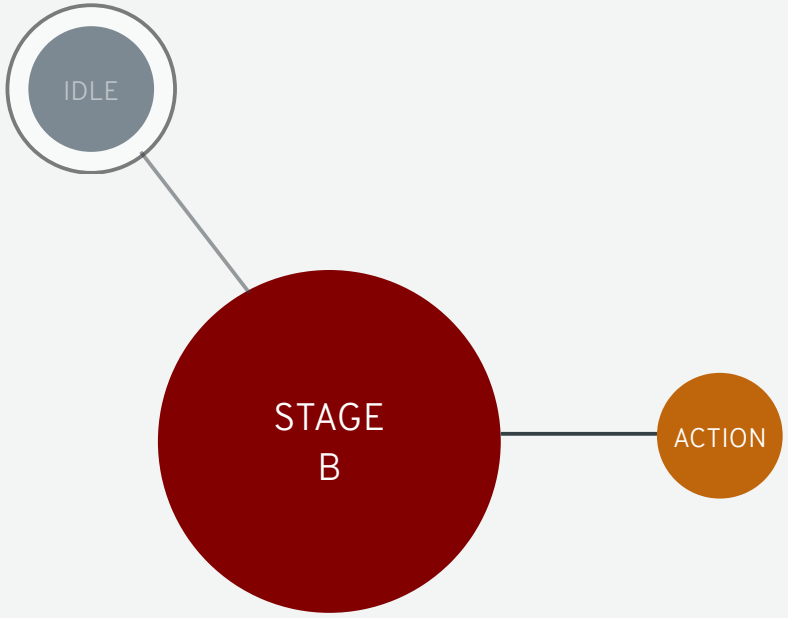

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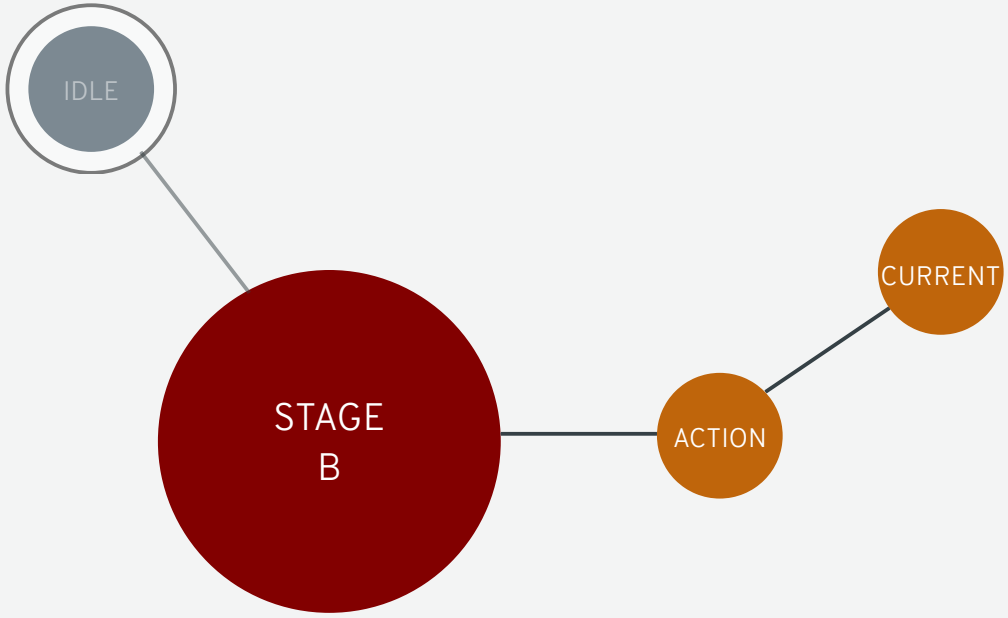

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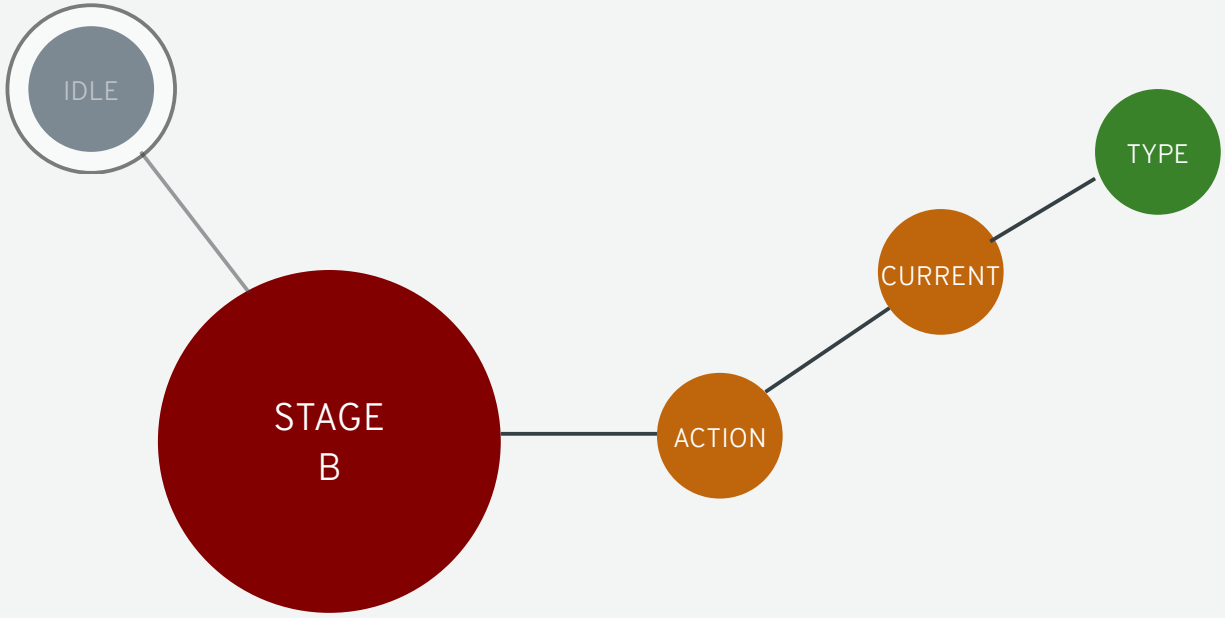

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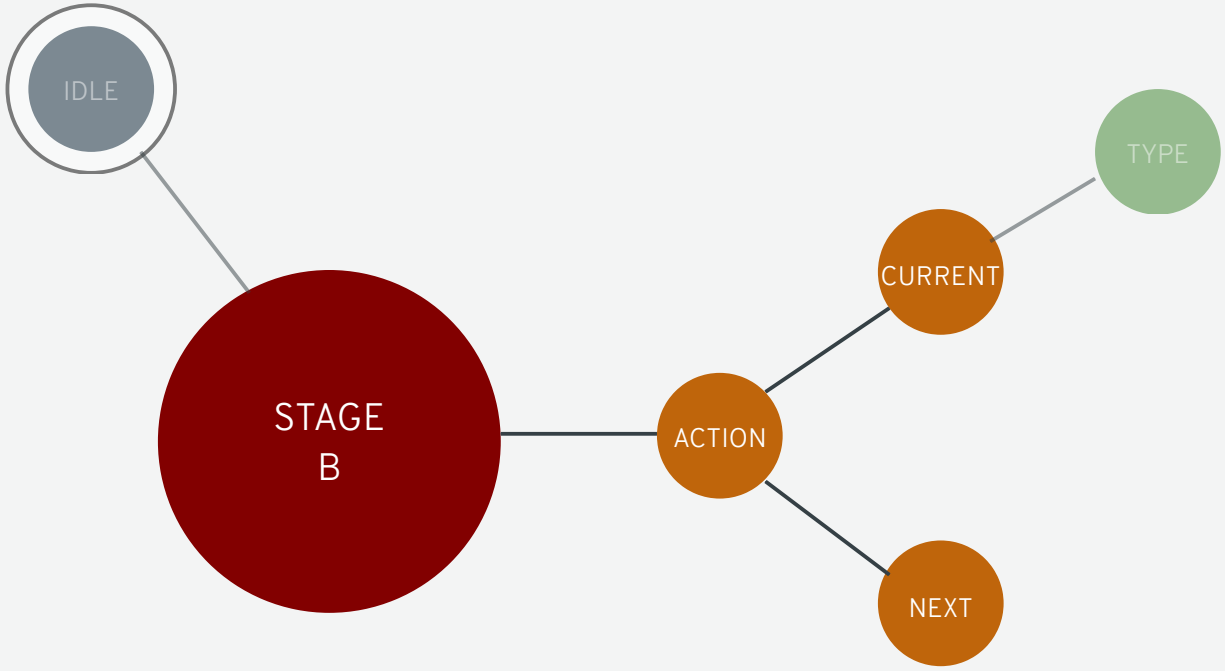
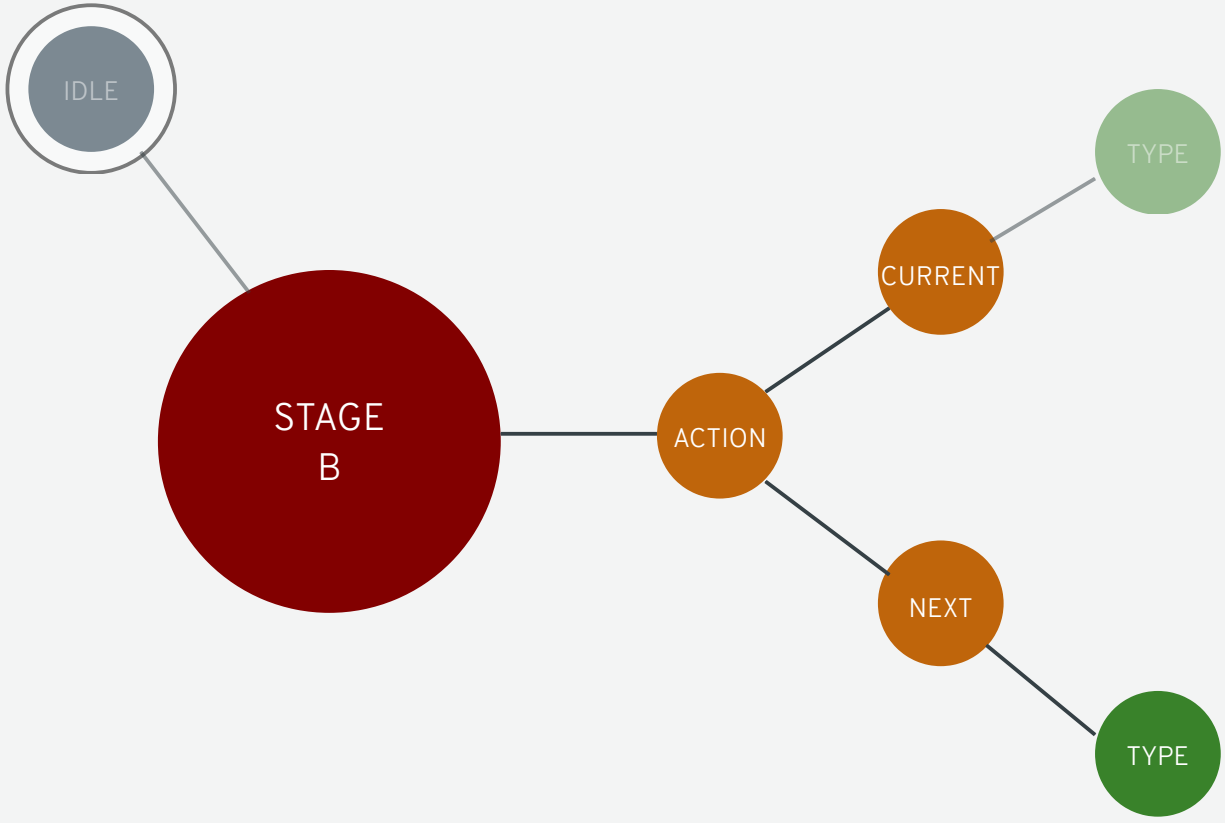


SID DAEMON

IDENTIFY - STAGE "B



SID DAEMON

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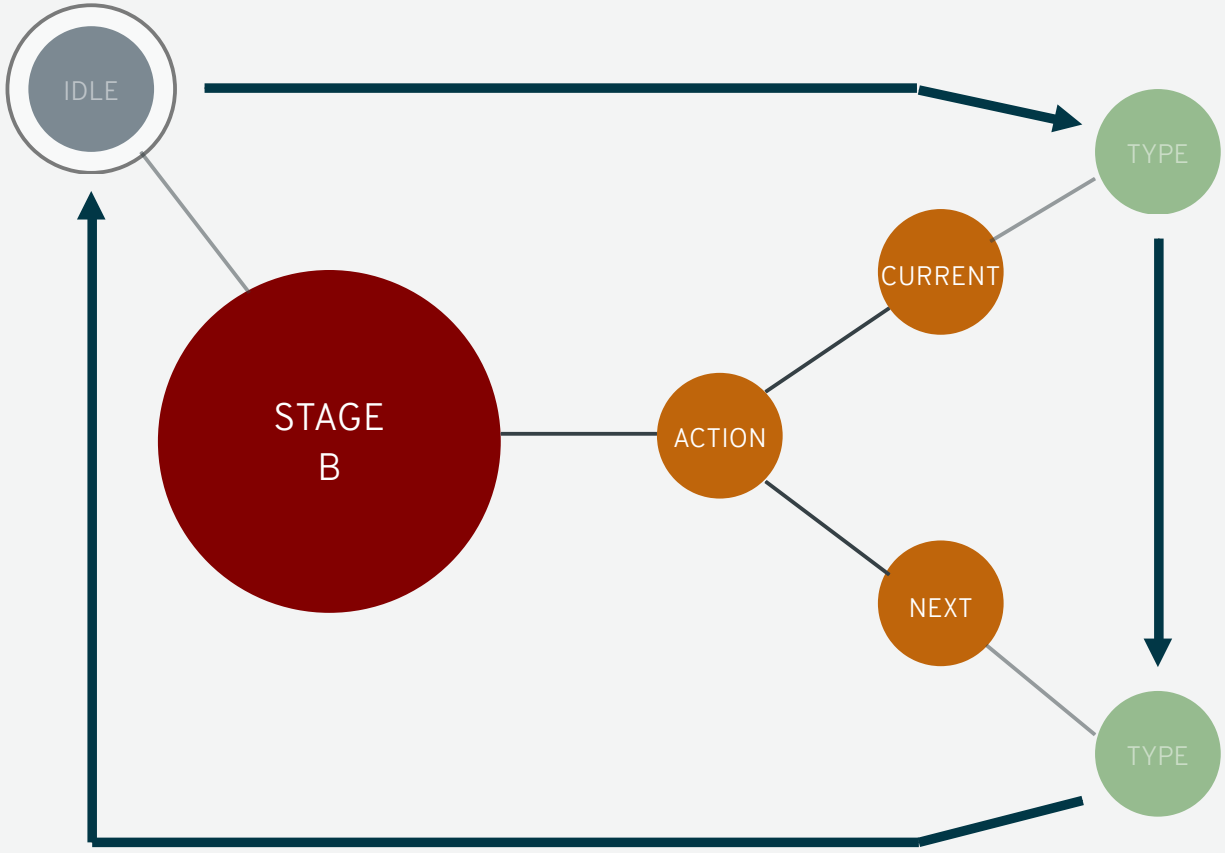

SID DAEMON
DATABASE

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- key-value (KV) database with various backends

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- key-value (KV) database with various backends
- value types
  - simple
  - vector

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- separate key namespaces
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  - **KV_NS_GLOBAL** (visible globally)
  - **KV_NS_MODULE** (visible only in specific module)
  - **KV_NS_DEVICE** (visible only when processing specific device)

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- per-module protection flags
  - **KV_PROTECTED** (originating module can read-write, others read-only)
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- persistence
  - **KV_PERSISTENT** (persist record for next use)

QUESTIONS ?

github: https://github.com/prajnoha/sid

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THANK YOU!

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