



Clear Linux*
Project

The Modern Operating System, A Clear Choice.

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**Today's operating systems are
required to meet new expectations**



PERFORMANT

SECURE

CUSTOMIZABLE

DEPLOYABLE

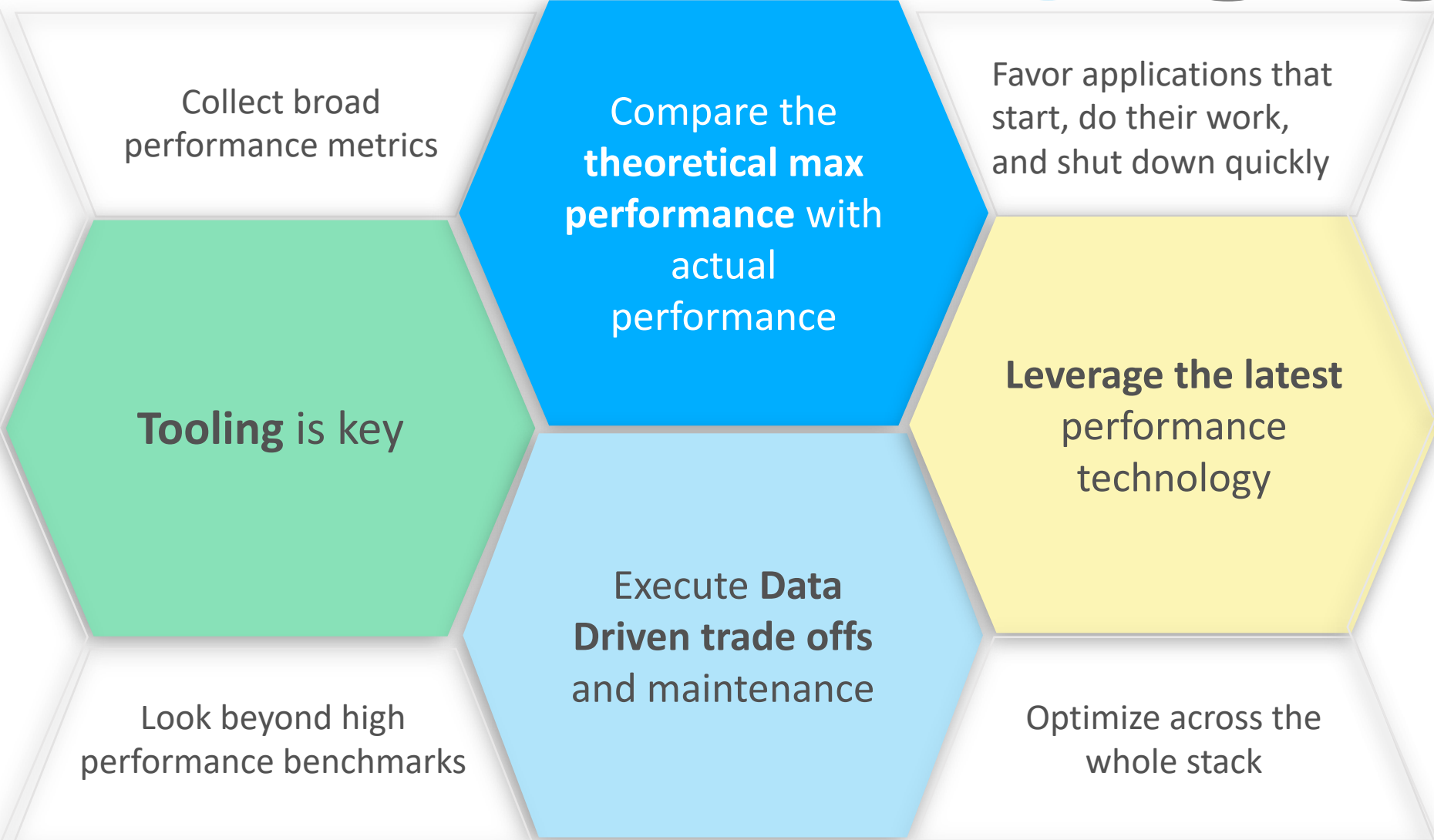
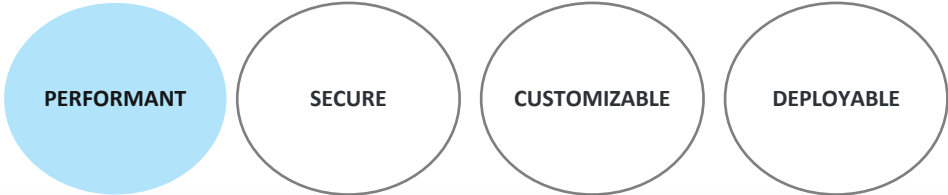


Clear Linux*

A modular open source OS optimized for **security** and **performance**, designed for **customization**, and readily **deployable** from the Cloud to the Edge.

Keeping users performant and secure

Clear Linux* performance philosophy



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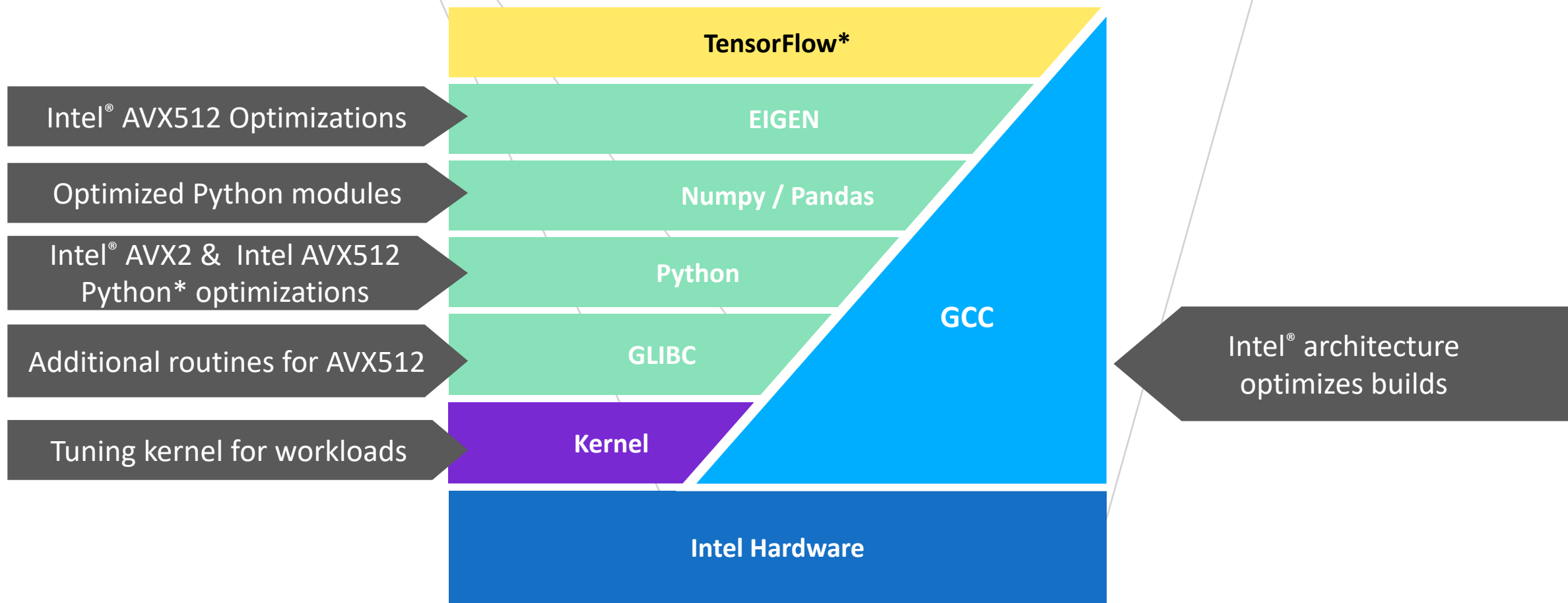
TensorFlow* optimizations throughout the stack

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Security

Clear Linux* stays in lockstep with upstream for **current security upgrades** and is designed to deliver available security mitigations to customers rapidly.



Constant vulnerability scanning

Aggressive mitigation policy

Incorporates threats posted to the National Vulnerability Database. Applies patches and distributes in daily releases.

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Security

Clear Linux* ensures end to end security from the Cloud to the Edge, to the End Device.

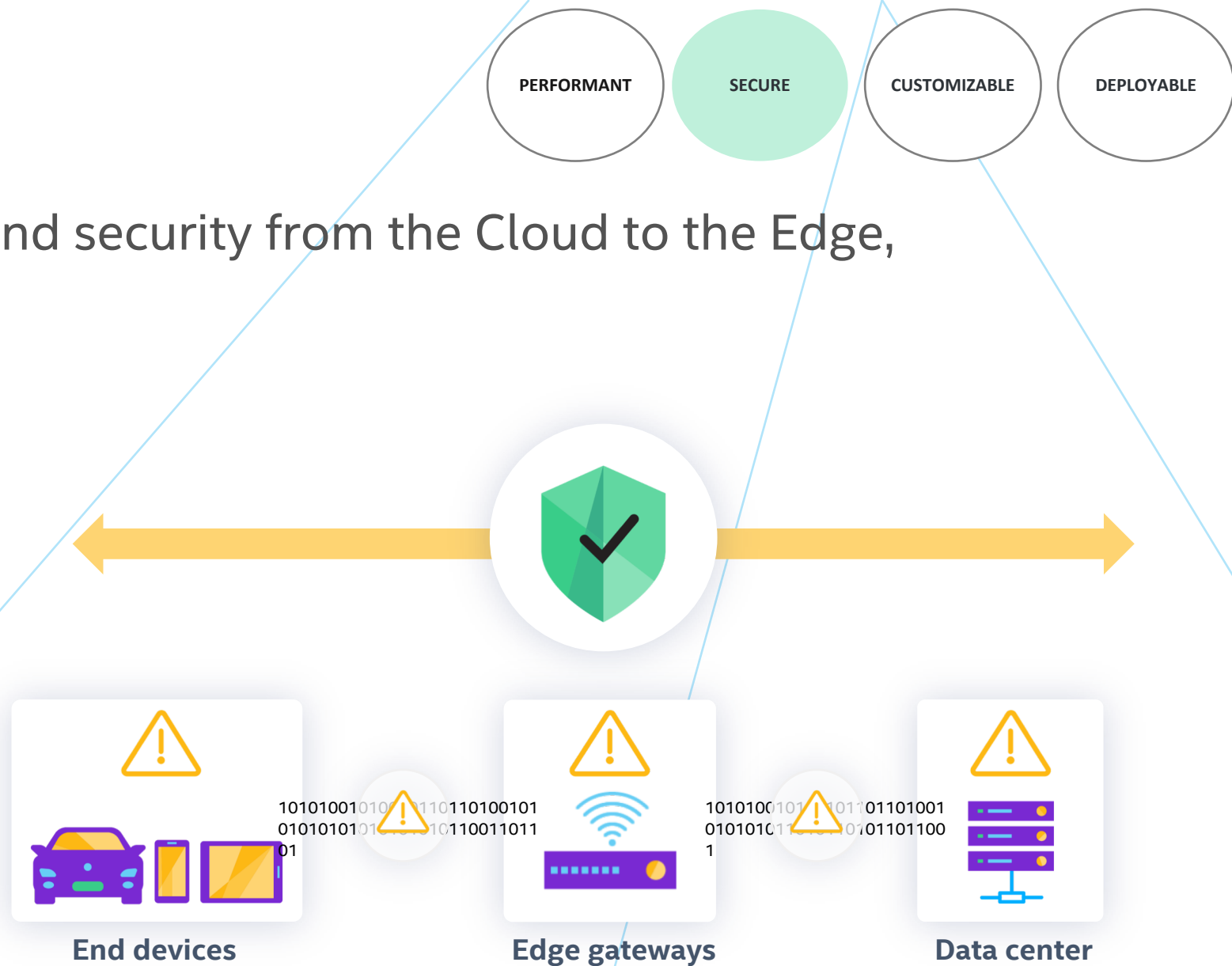
Unified "Trust" Store

Provides a common place for Certificate Authority Management

Packages points to one location to find certs, ensuring you can manage your trust policy consistently

Industry standard security features

Out of the box industry standard security features enabled
Eg. SecureBoot, IPTables, SSH, OpenSSL, IPsec VPN, Signed Update Content



Updates principles

Update size is relative to the size of the change

Clear Linux*

Original

Change

Update

Other distros

Original

Change

Update

1

Lightweight

2

Frequent

3

Incremental

4

Whole system

5

Version controlled

PERFORMANT

SECURE

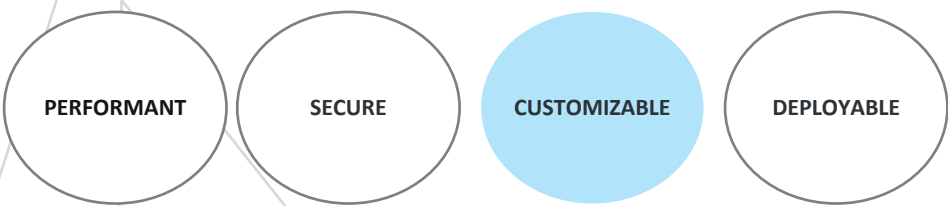
CUSTOMIZABLE

DEPLOYABLE

Customizing Clear Linux*

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OS design principle: Bundles



Functionality
based
content
curation



Content delivery system for install and update
Curated by functionality

Basis for testing, validation, and stack optimization
Allow for quality assurance based on use-case

Encapsulate dependencies
Dependencies are resolved at build time, not run-time

OS design principle: **Stateless**

Files are separated by owner

Unprivileged users: \$HOME

Sys admin or root: /etc

Clear Linux* : /usr

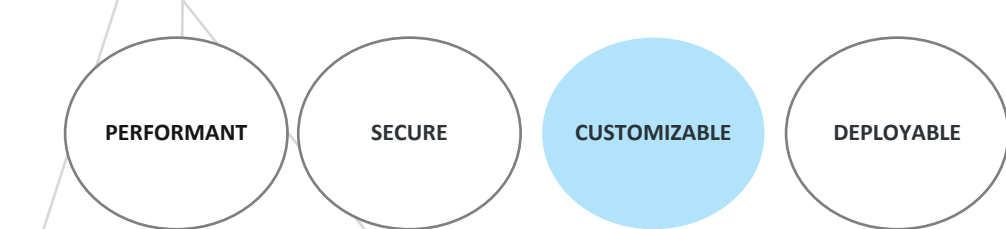
Configurations work out of the box

No need to modify anything that is owned by the OS

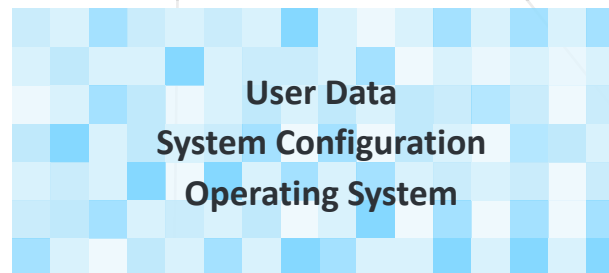
Modifying configs is safe and easy

Only include the option line you wish to alter.

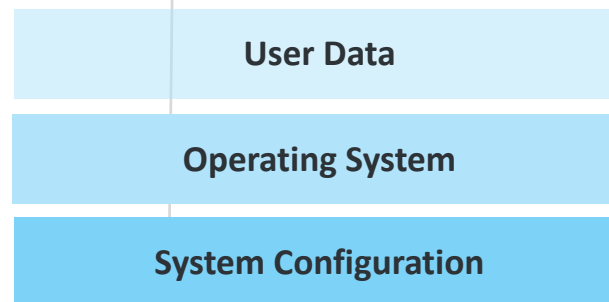
Factory reset by deleting user configuration



TRADITIONAL OS

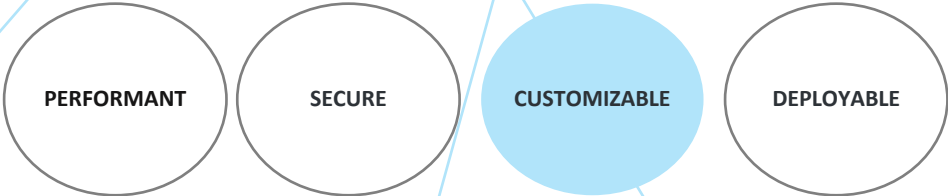


CLEAR LINUX*

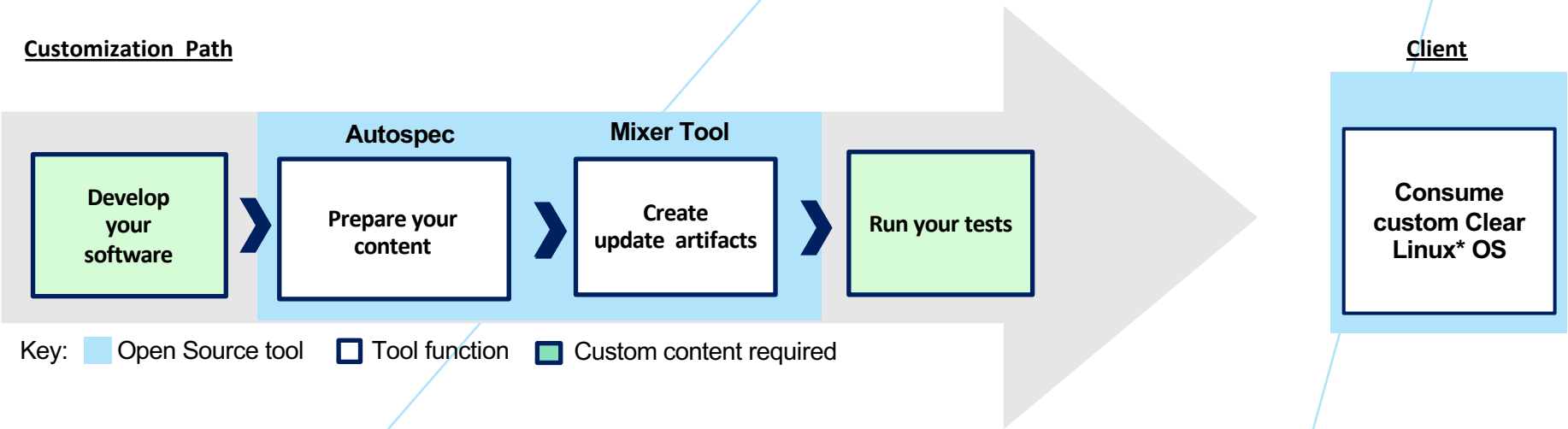


Creating a custom Clear Linux* OS

Clear Linux* tooling allows for incremental Effort



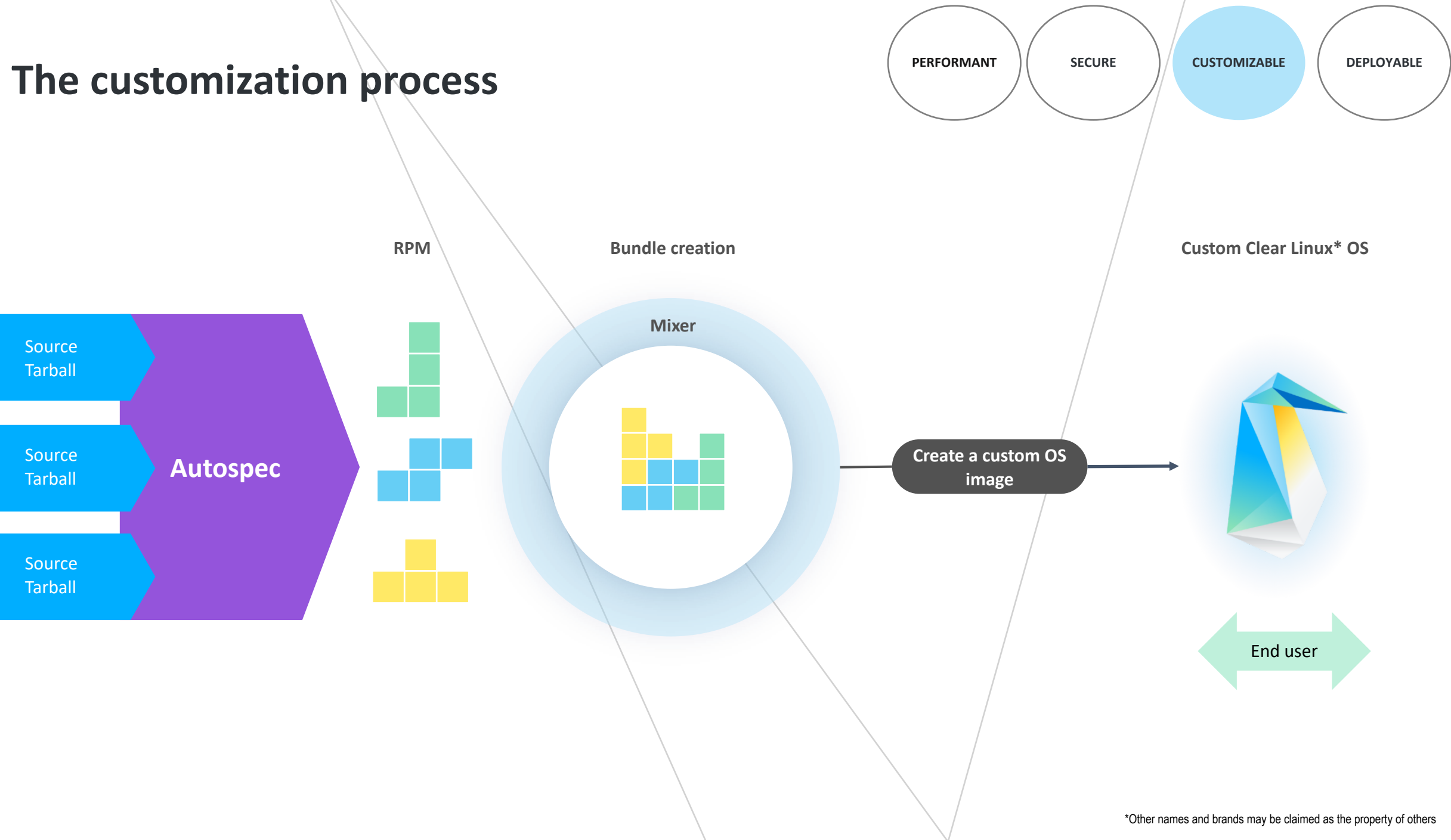
The Mixer Tool combines new content with an existing Clear Linux* version.



There is **no need to recompile the entire OS**. Work is only required on the customization piece.

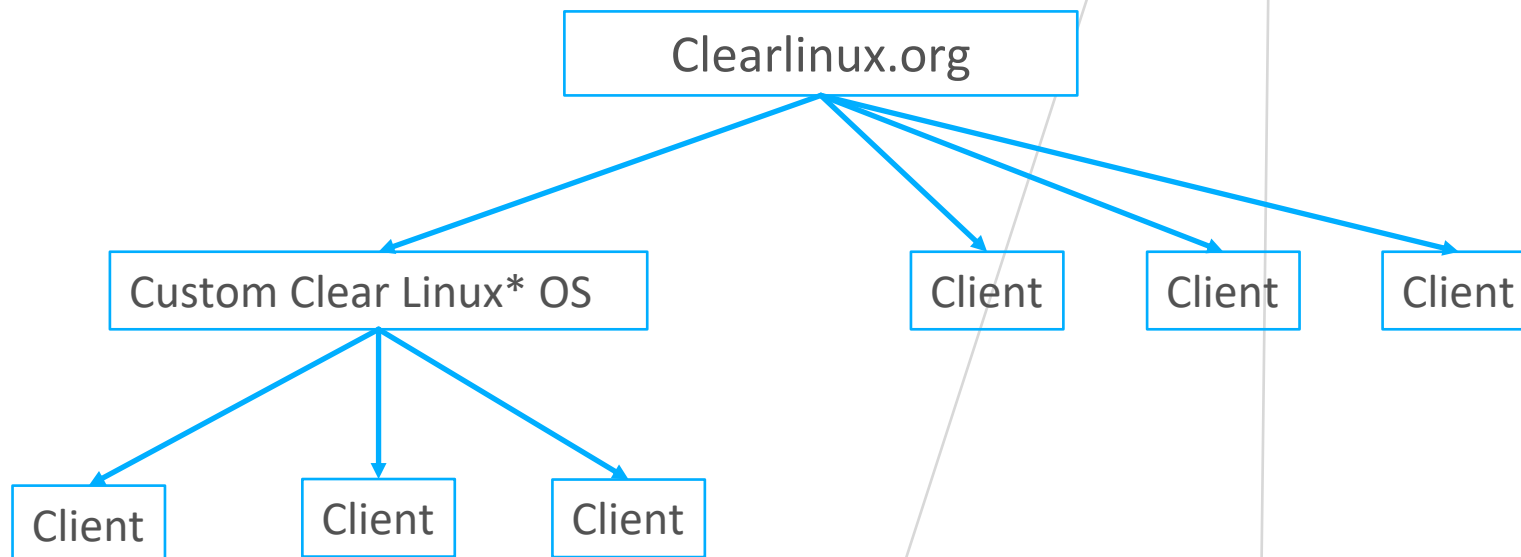
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The customization process



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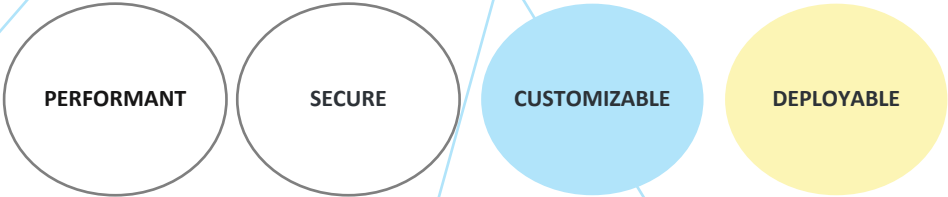
Become a derivative of Clear Linux*



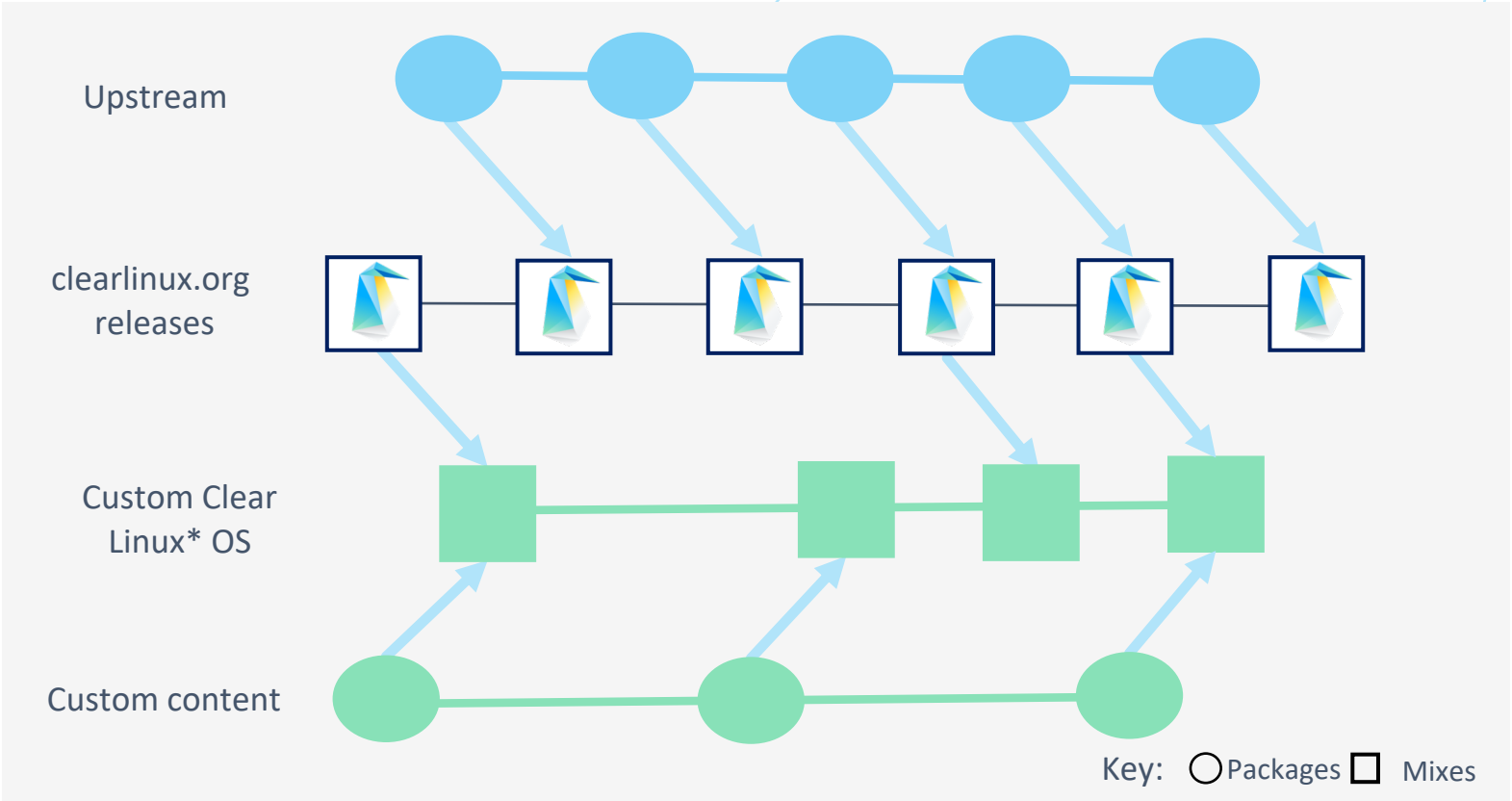
Clear Linux tooling enables you to create your own distribution.

Tools are open source. The source code for security and performance patches is on GitHub. Complete control of a downstream version is available.

Manage your custom Clear Linux* OS



As a derivative, **you decide** when or if to consume content from Clear Linux just as you decide whether to update after changes to the software you are developing.

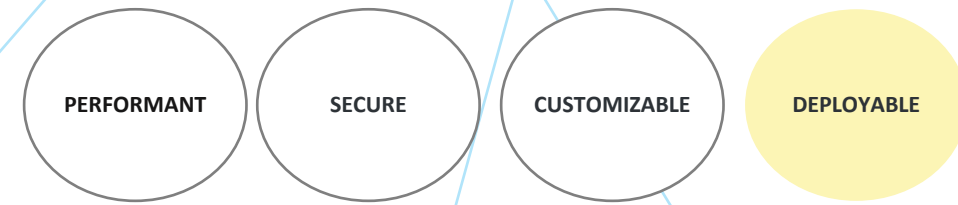


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Update your custom Clear Linux* OS

Clear Linux* added **robustness through automation**

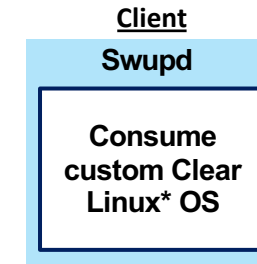
Take advantage of Clear Linux* automated development model for **faster TTM**.



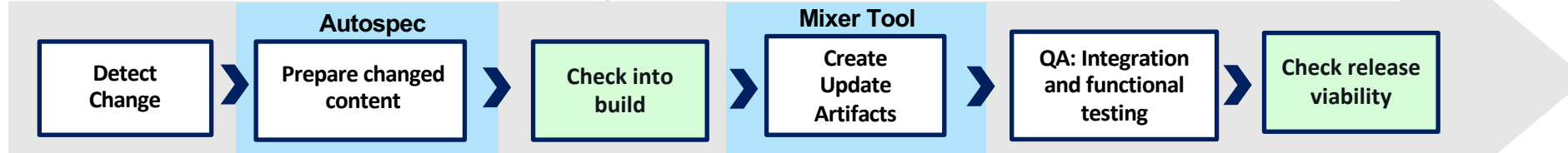
Customization Update



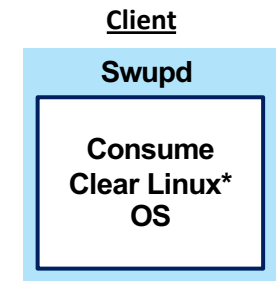
Key: Open Source tool Tool function Custom content required



Clear Linux* Update



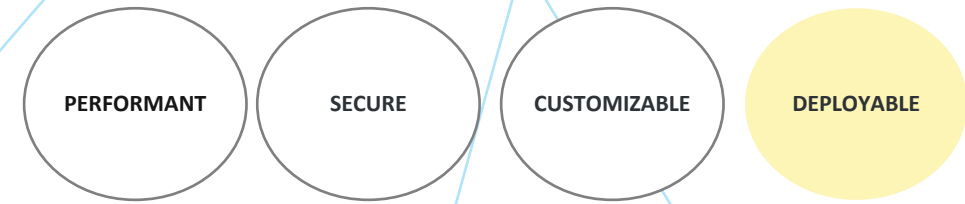
Key: Open Source tool Automated function Human input required



92% of components packaged by a tool instead of a human

Automated functional testing and software compliance per release

Leverage Clear Linux* features to deploy



1

Version control

Describe all software on a machine with a single number

2

Version verification

Prove and reconcile that the software on a machine is consistent for that version of Clear Linux*.

3

Lightweight updates

Consume and dispatch performance and security updates relative to the size of your change

4

Robust update tooling

Leverage the Clear Linux* way of working to dispatch updates on a cadence that suits your needs.

Summary

Clear Linux* is a modular open source OS optimized for security and performance, designed for customization, and readily deployable from the Cloud to the Edge.



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Try us out!

Engage with us at
clearlinux.org

See our source code at
github.com/clearlinux



Images available at:

Clearlinux.org



...

See more at OSS NA!

Today

Event	Time	Location
Clear Linux* Demos	10:30am - 5:00pm	Technology showcase area at Booth #302

Tomorrow

Event	Time	Location
Shop Talk with Matthew	11:00 am - 12:00 pm, 2:00 pm - 3:00 pm	Room 210, Vancouver Convention Centre West
Clear Linux* Demos	10:30am - 7:00pm	Technology showcase area at Booth #302

Friday

Event	Time	Location
Shop Talk with Matthew	11:00 am - 12:00 pm	Room 210, Vancouver Convention Centre West
Clear Linux* Demos	10:20am - 12:30pm	Technology showcase area at Booth #302

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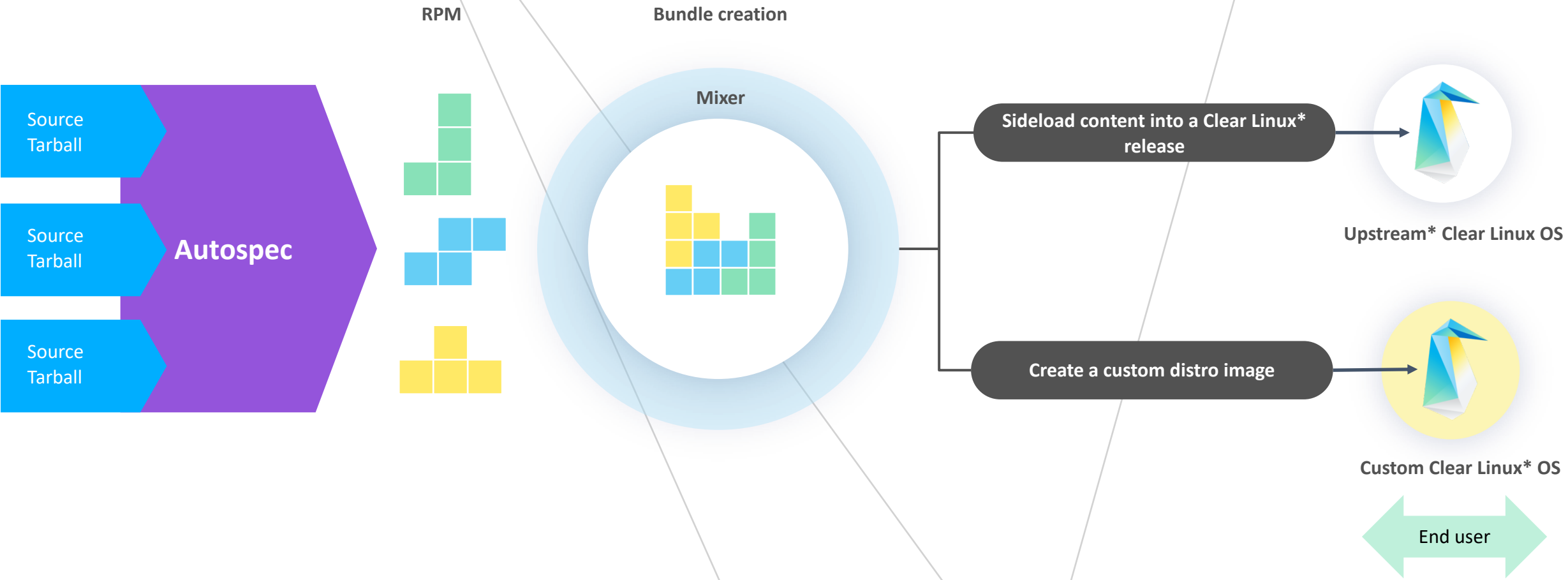
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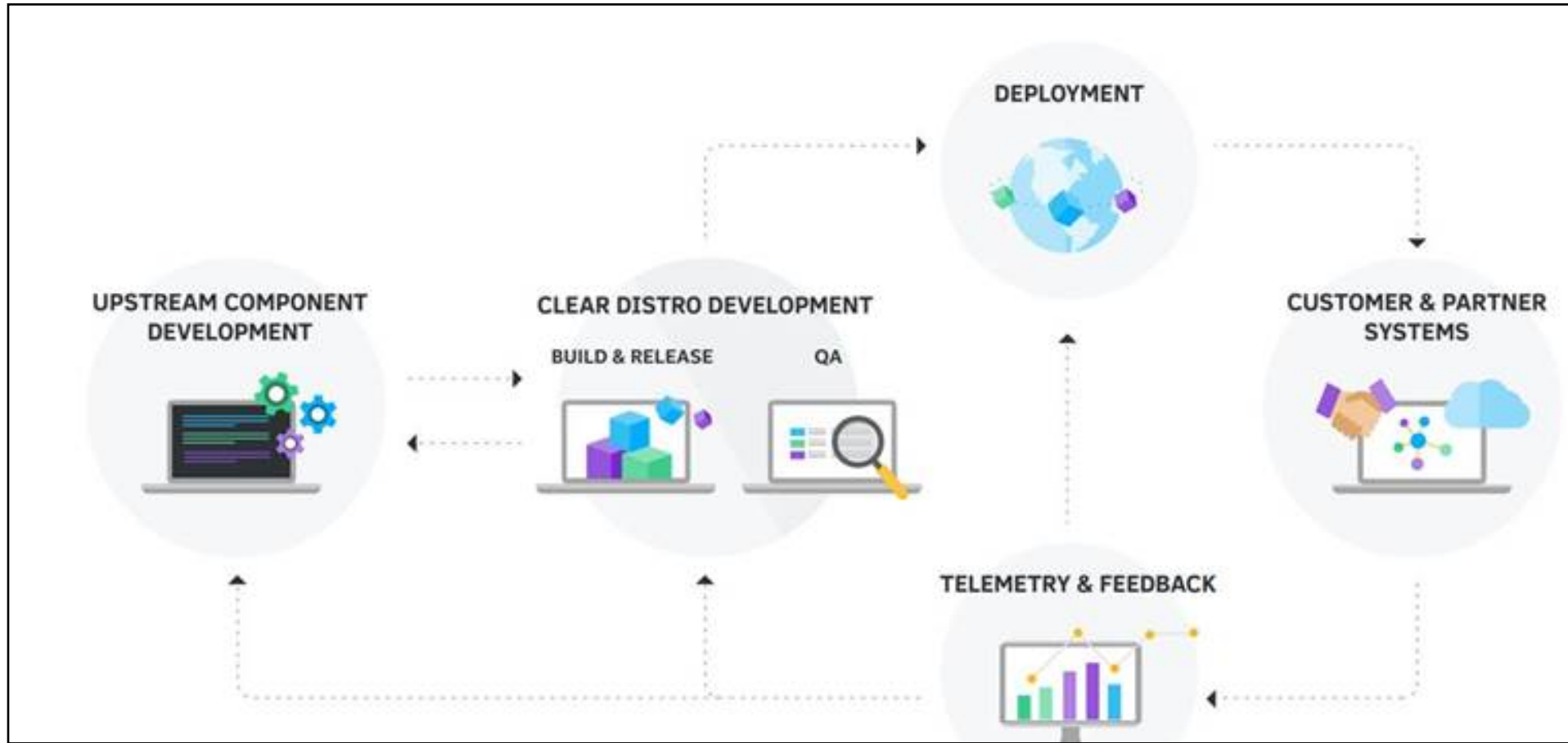
Back Up

The Customization Process



* A hybrid of custom and upstream that can still get all upstream bundles and updates

Clear Linux* Operational Model = CI/CD



Close loop operational model. End user **reporting is fed back** into system to ensure quality controlled releases

Source: Internal OS Development Engineering Analytics

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