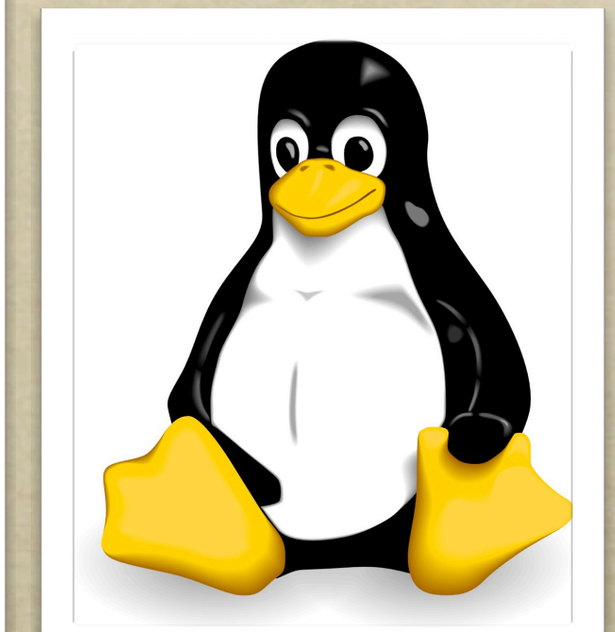
EIA RESOLUTION CHART 1956



Linux Kernel v2.6.33.3 Configuration

File Edit Option Help

Option

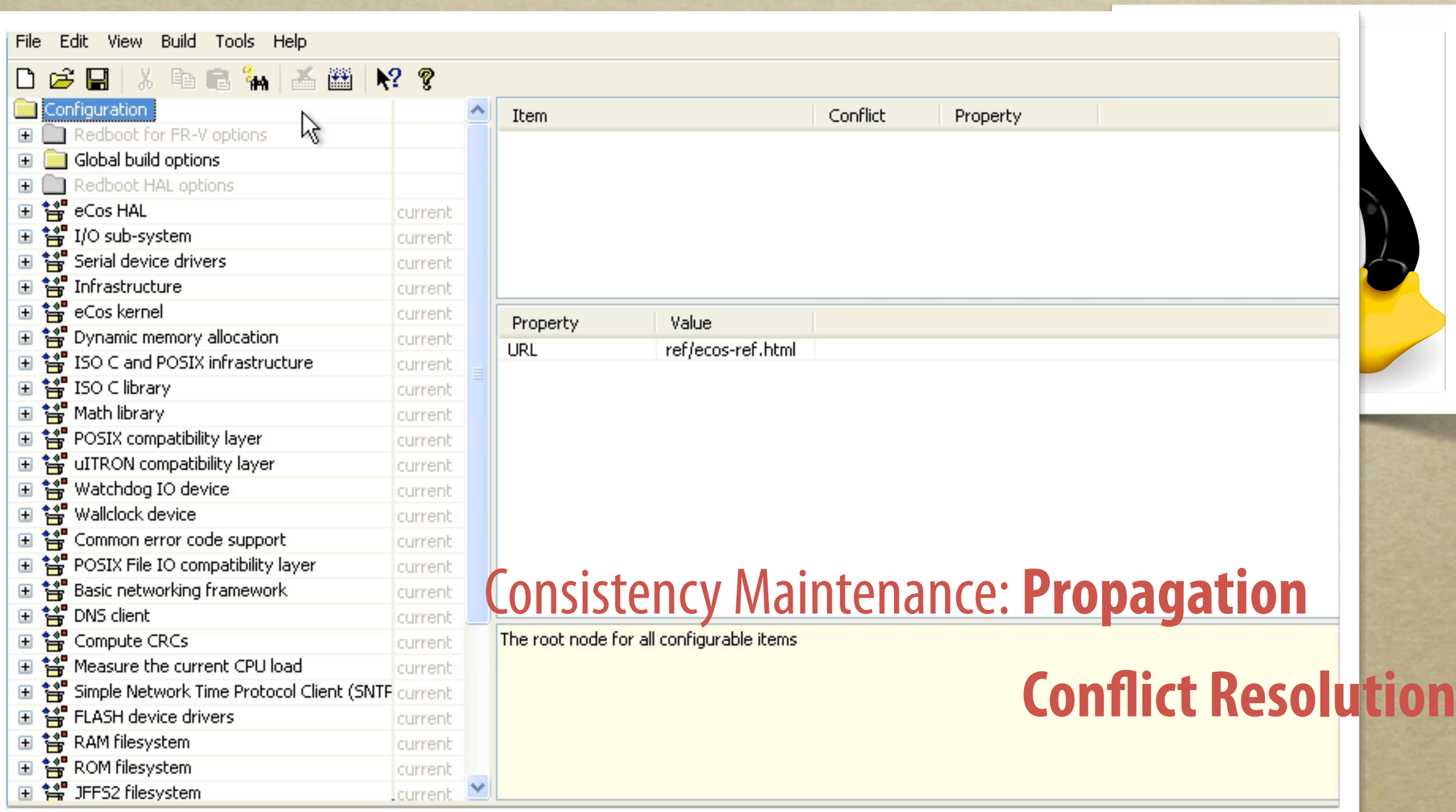
- General setup
  - RCU Subsystem
  - [x] Control Group support
  - [ ] Configure standard kernel features
  - Kernel Performance Events And Coun
  - GCOV-based kernel profiling
- [x] Enable loadable module support
- Enable the block layer (NEW)
  - IO Schedulers
- Processor type and features
  - [x] Paravirtualized guest support
- Power management and ACPI options
  - [x] ACPI (Advanced Configuration and
  - [x] SFI (Simple Firmware Interface) Su
  - CPU Frequency scaling
  - Memory power savings
- Bus options (PCI etc.)
  - [*] PCCard (PCMCIA/CardBus) support
  - [x] Support for PCI Hotplug
- Executable file formats / Emulations
- Networking support
  - Networking options
    - [x] Network packet filtering framew
      - Core Netfilter Configuration
      - [*] IP virtual server support
      - IP: Netfilter Configuration
      - IPv6: Netfilter Configuration
      - DECnet: Netfilter Configuration

Option

- [x] Prompt for development and/or incomplete code/driver
- Local version - append to kernel release:
- [ ] Automatically append version information to the versio
- Kernel compression mode
  - (*) Gzip
  - ( ) Bzip2
  - ( ) LZMA
  - ( ) LZO
- [x] Support for paging of anonymous memory (swap)
- [x] System V IPC
- [x] POSIX Message Queues
- [x] BSD Process Accounting
  - [x] BSD Process Accounting version 3 file format
- [x] Export task/process statistics through netlink (EXPERIM
  - [x] Enable per-task delay accounting (EXPERIMENTAL)
  - [x] Enable extended accounting over taskstats (EXPERI
    - [x] Enable per-task storage I/O accounting (EXPERIM
- [x] Auditing support

General setup

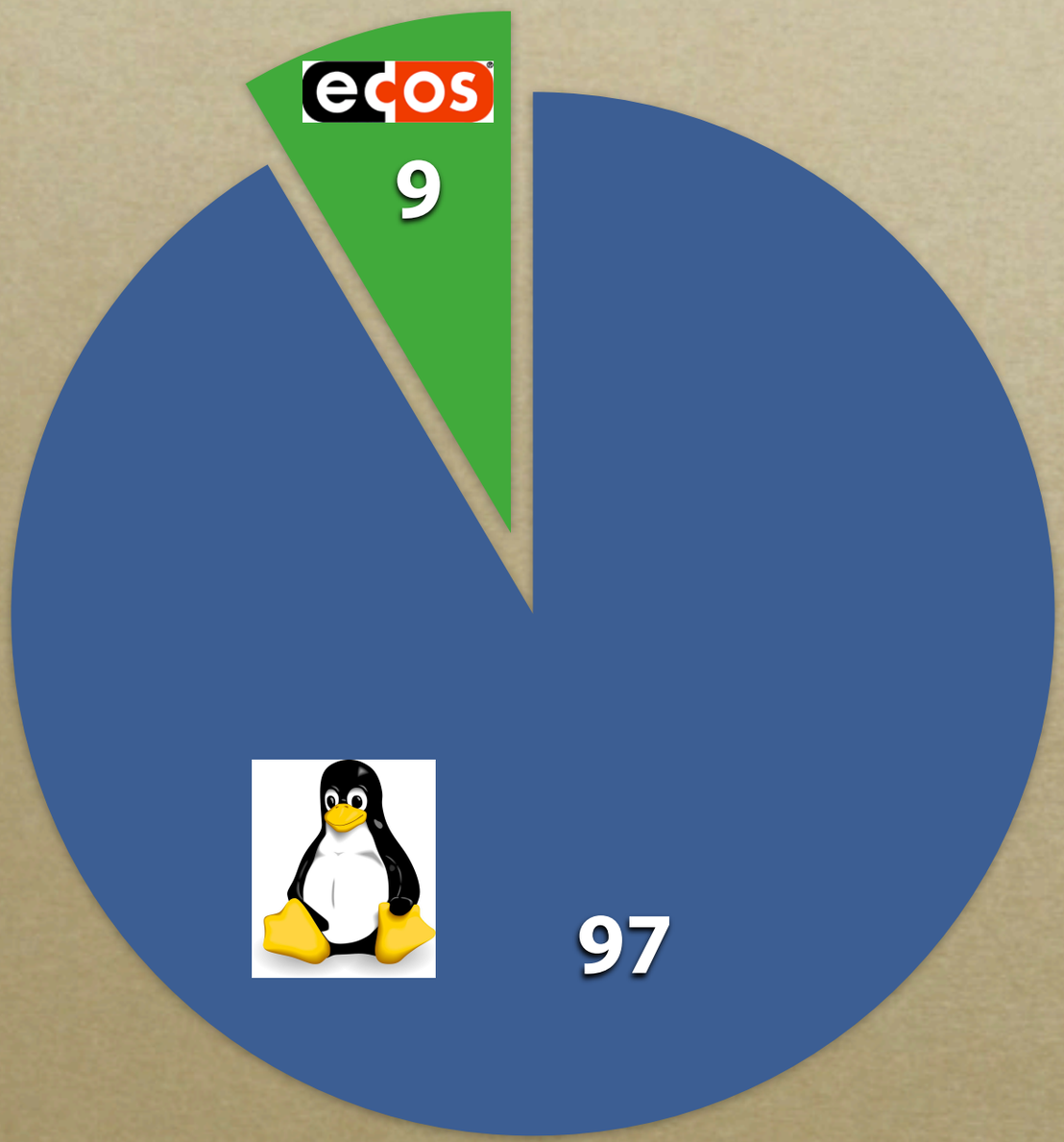
Consistency Maintenance: **Propagation**



Consistency Maintenance: **Propagation**

Conflict Resolution

Challenges



Activating inactive features

Fix incompleteness

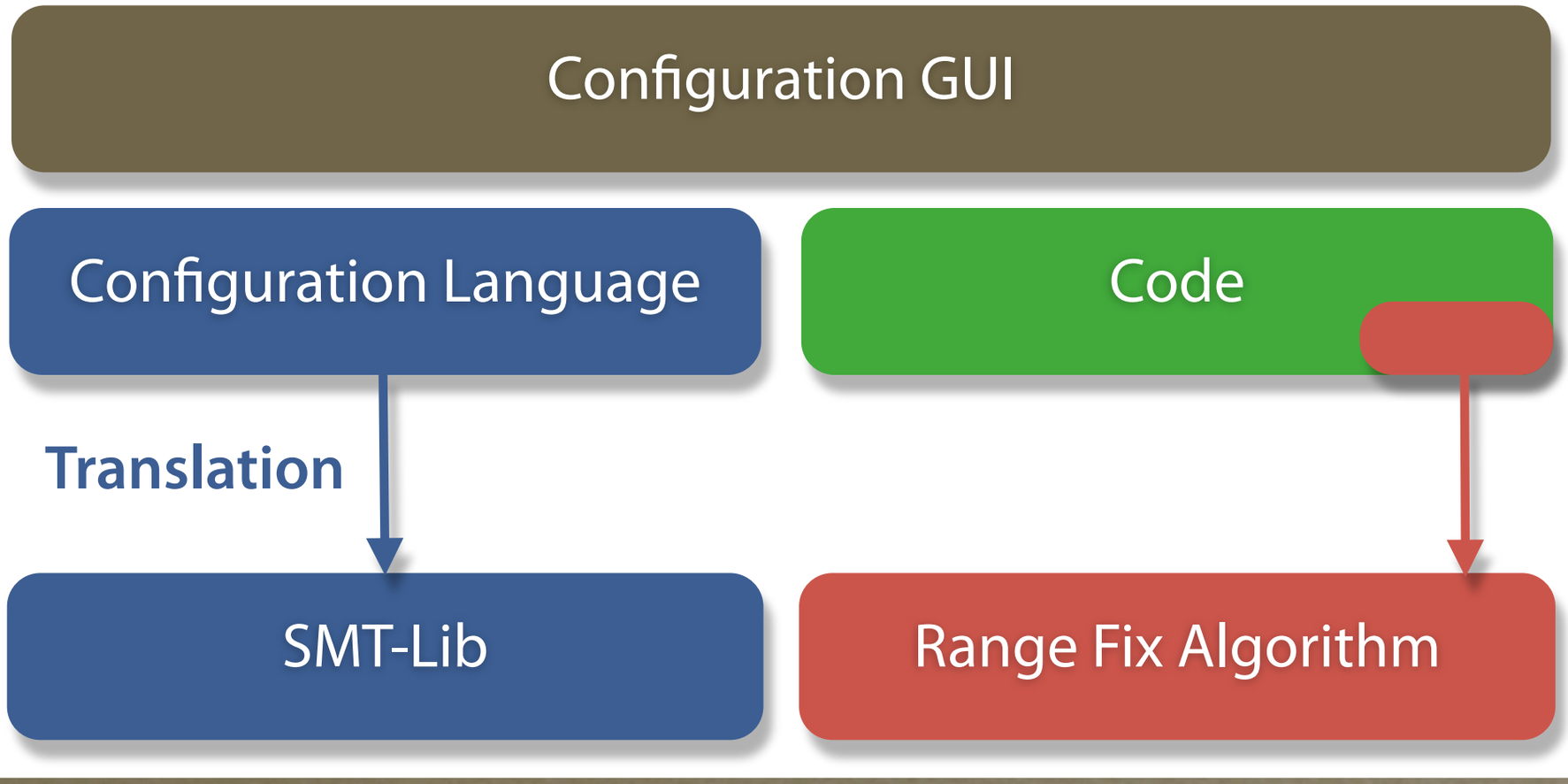
Configurator

Configuration GUI

Configuration Language

Code

Configurator



Configuration	
Object Pool Configuration	v3_0
Buffer Size (KB)	4
Object Size (Byte)	512
Object Pool Size	8
Use Pre-Allocation	
Pre-Allocation Size	10
Allocation Time	
Startup	
First Access	
Idle	

Item	Conflict	Property
Pre_Allocation_Size	Unsatisfied	Requires Pre_Allocation_Size <= Obje

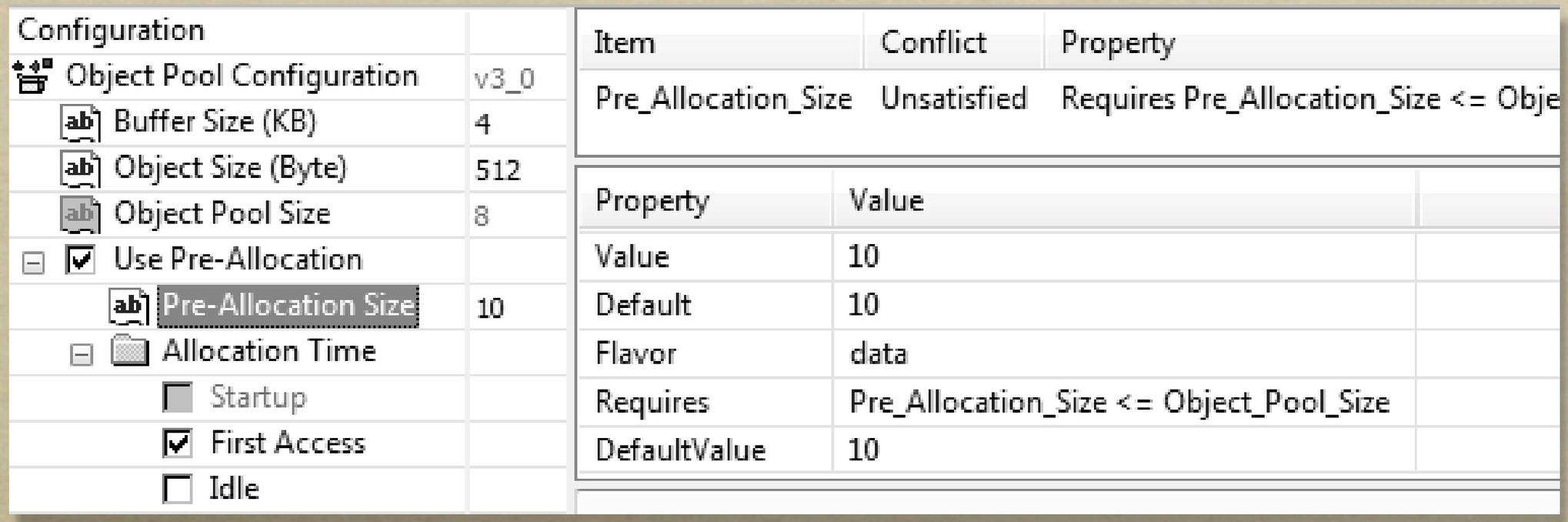
Property	Value
Value	10
Default	10
Flavor	data
Requires	Pre_Allocation_Size <= Object_Pool_Size
DefaultValue	10

10 <= 8

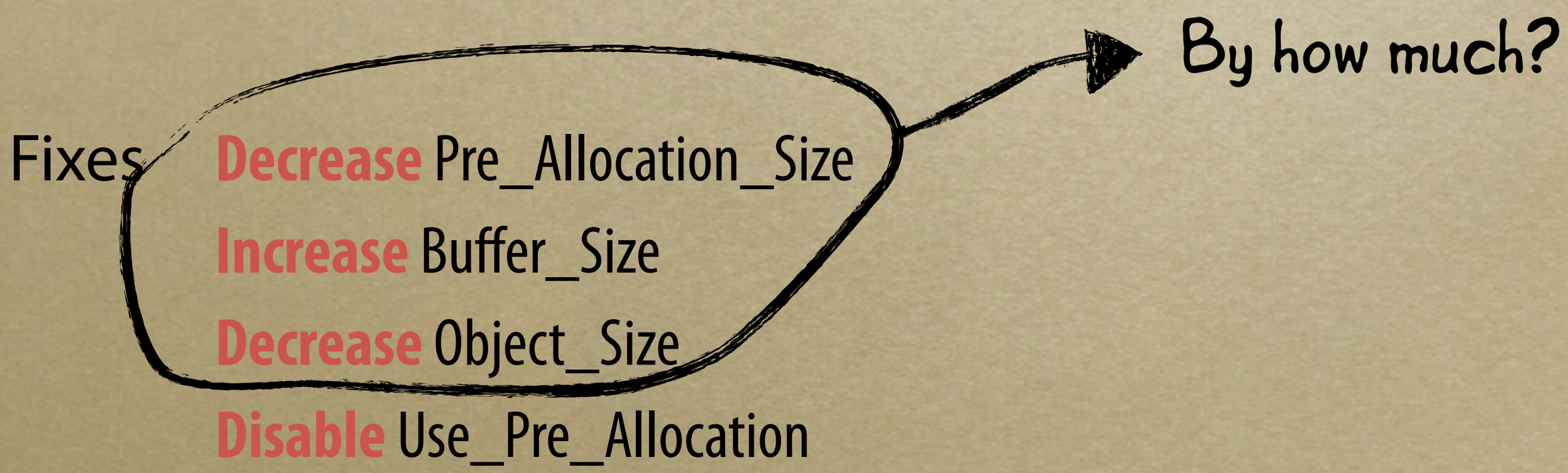
Object Pool Size	8
Use Pre-Allocation	
Pre-Allocation Size	10
Allocation Time	
Startup	

Property	Value
Value	8
Default	8
Flavor	data
Calculated	Buffer_Size * 1024 / Object_Size

Use_Pre_Allocation -> (Pre_Allocation_Size <= Buffer_Size * 1024 / Object_Size)



Use_Pre_Allocation -> (Pre_Allocation_Size <= Buffer_Size * 1024 / Object_Size)



Overview

Typed variables

Pre_Allocation_Size: Int
Buffer_Size: Int
Object_Size: Int
Use_Pre_Allocation: Bool

Assigned values

Pre_Allocation_Size = 10
Buffer_Size = 4
Object_Size = 512
Use_Pre_Allocation = true

Logic constraint

Use_Pre_Allocation -> (...)

Fix Generator

Complete fix list

Pre_Allocation_Size <= 8
Buffer_Size >= 5
Object_Size <= 409,6
Use_Pre_Allocation = false

Constraint violation

V : {m:Bool, a:Int, b:Int } → Typed variables

e : {m=true, a=6, b=5} → Configuration (assignment)

c : (m → a>10) ∧ (¬m → b>10) ∧ (a < b) → Violated constraint

Range Fixe

Assignment Unit

Range Unit

[m := false, b : b > 10] → Range Fix

[(a,b) : a > 10 ∧ a < b] → Range Fix

Constraint violation

V : {m:Bool, a:Int, b:Int } → Typed variables

e : {m=true, a=6, b=5} → Configuration (assignment)

Correct

c : (m → a>10) ∧ (¬m → b>10) ∧ (a < b) → All the configuration that can be produced satisfy the constraint → Violated Constraint

Minimality of variables — A fix should change a minimal set of variables

Range Fixe

Maximality of ranges — The range of a fix should be maximal

Fix generation algorithm

1. Find minimal diagnoses → HS-DAG algorithm

Hard constraint (c)

$(m \rightarrow a>10) \wedge (\neg m \rightarrow b>10) \wedge (a < b)$

Soft constraints (e)

[1] $m = true$

[2] $a = 6$

[3] $b = 5$

Fix generation algorithm

1. Find minimal diagnoses → HS-DAG algorithm

Hard constraint (c)

$(m \rightarrow a>10) \wedge (\neg m \rightarrow b>10) \wedge (a < b)$

Soft constraints (e)

[1] $m = true$

[2] $a = 6$

[3] $b = 5$

Fix generation algorithm

HS-DAG algorithm

Hard constraint (c)

$(m \rightarrow a>10) \wedge (\neg m \rightarrow b>10) \wedge (a < b)$

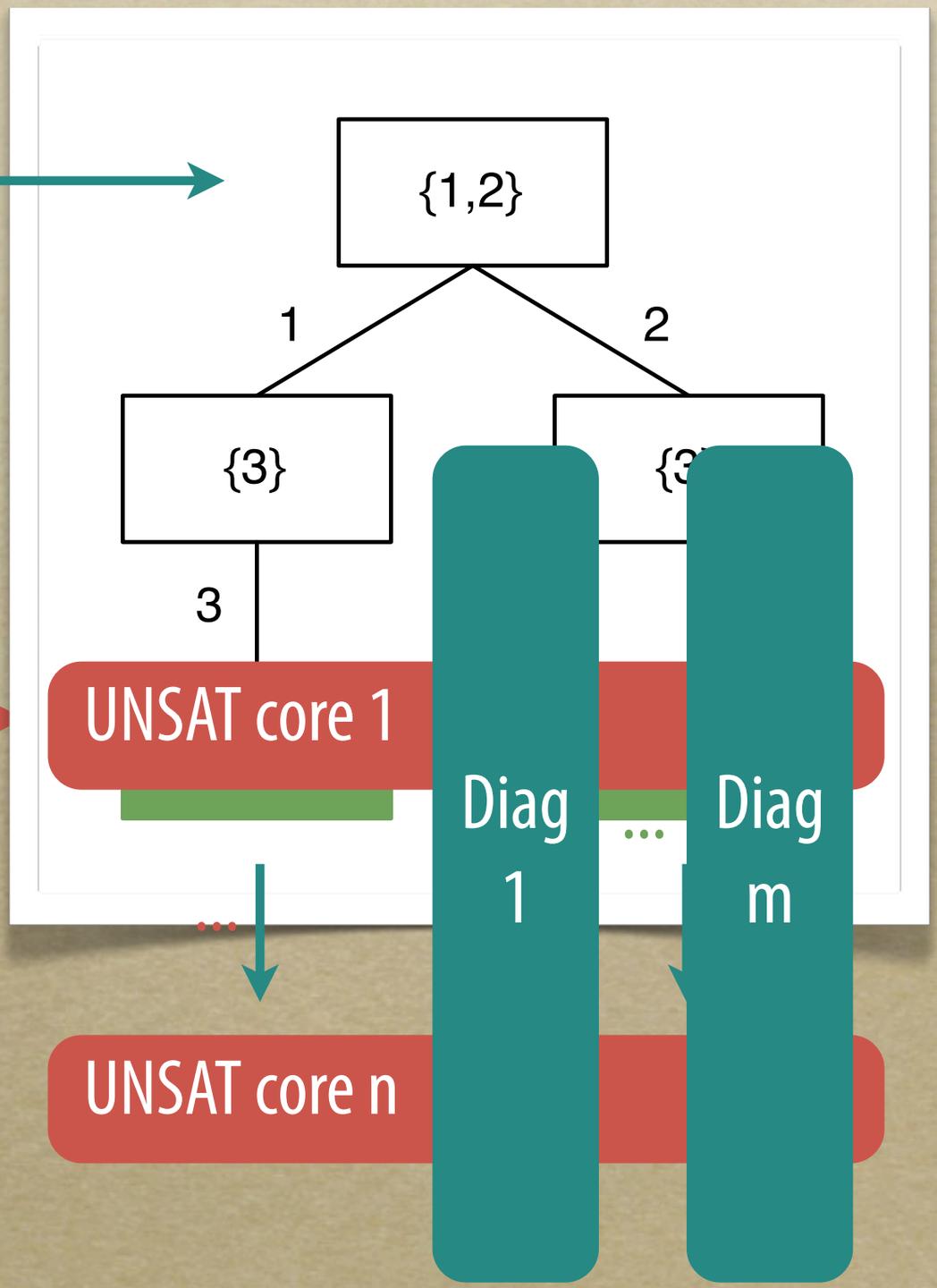
Soft constraints (e)

[1] m = true

[2] a = 6

[3] b = 5

UNSAT cores?



Fix generation algorithm

1. Find minimal diagnoses → HS-DAG algorithm

2. Replace unchanged variables {m = true, b=5}

Replace a

$(m \rightarrow 6>10) \wedge (\neg m \rightarrow b>10) \wedge (6 < b)$

Fix generation algorithm

1. Find minimal diagnoses → {m = true, b=5}

2. Replace unchanged variables → $(m \rightarrow 6>10) \wedge (\neg m \rightarrow b>10) \wedge (6<b)$

3. Generate the fixes

$(m \rightarrow 6>10) \wedge (\neg m \rightarrow b>10) \wedge (6<b)$

CNF

$(\neg m \vee 6>10) \wedge (m \vee b>10) \wedge (6<b)$

folding + simpl.

$(\neg m) \wedge (b>10) \wedge (6<b)$

merging

$(\neg m) \wedge (b>10 \wedge 6<b)$

simplifying

$(\neg m) \wedge (b>10)$

Multi-Constraint violation

V : {m:Bool, n:Bool, x:Bool, y:Bool, z:Bool }

e : {m=true, n=false, x=false, y=false, z=false}

c : (m∧ n)

S : {n→(x∨y), x→z} ⟶ Satisfied constraints

Possible fix ⟶ [n := true] Violates ⟶ n→(x∨y) ⟶ Ignore

⟶ Eliminate fix

⟶ Propagate

Fix generation algorithm with propagation

c

P : {m∧ n}

S

Shares variables with {n→(x∨y), x→z} ?

P : {m∧ n, n→(x∨y)}

Shares variables with { x→z} ?

P : {m∧ n, n→(x∨y), x→z}

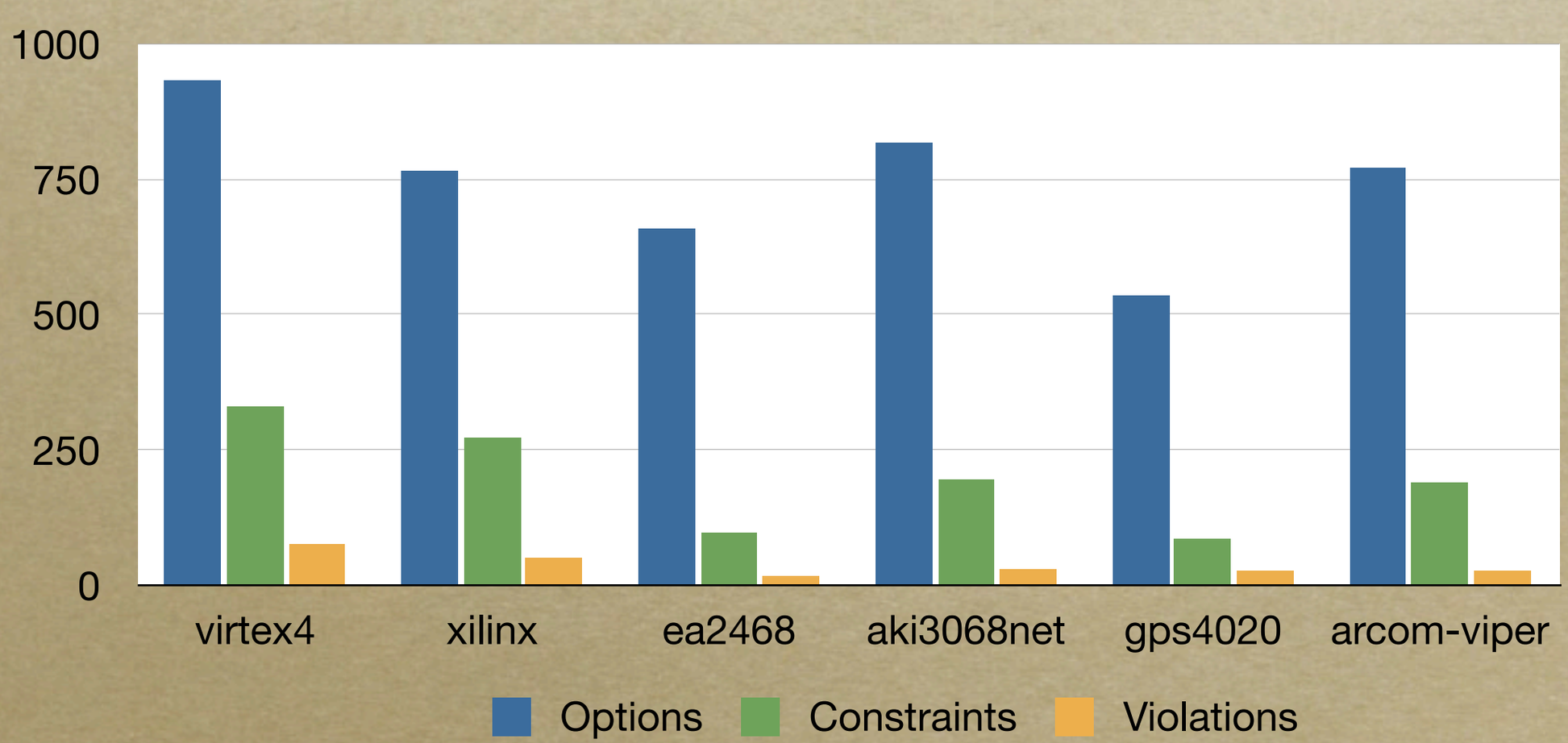
Replace c by P

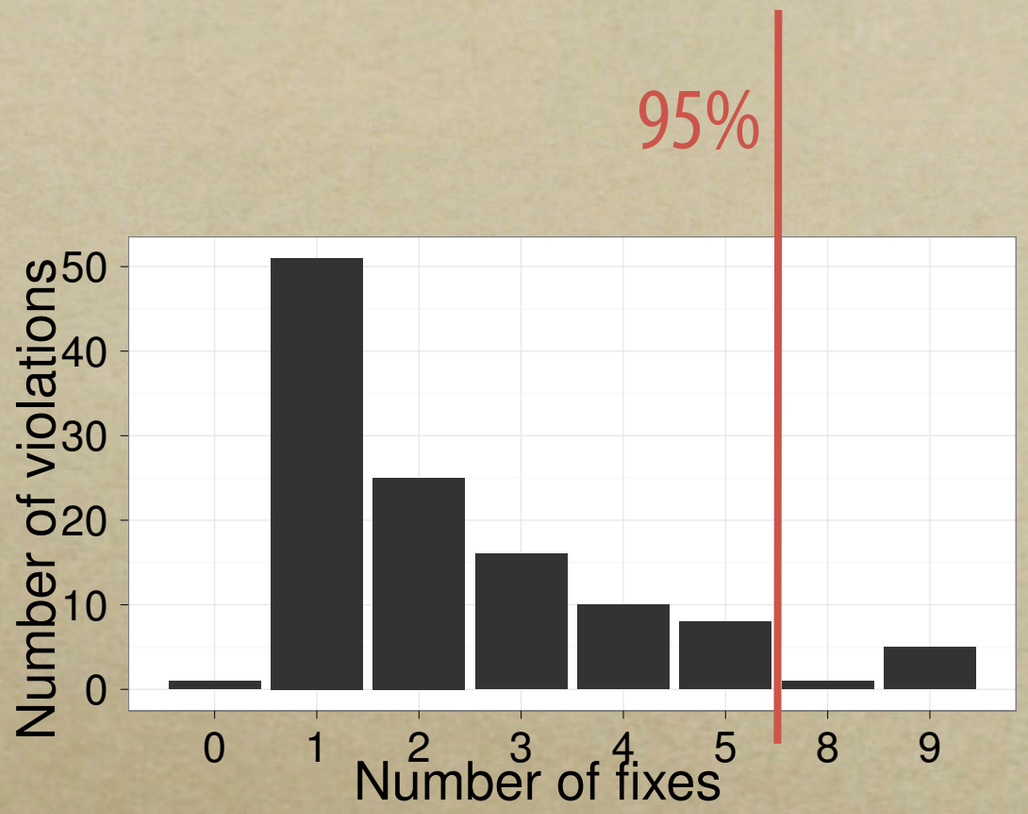
c : (m∧ n)∧(n→(x∨y))∧(x→z)

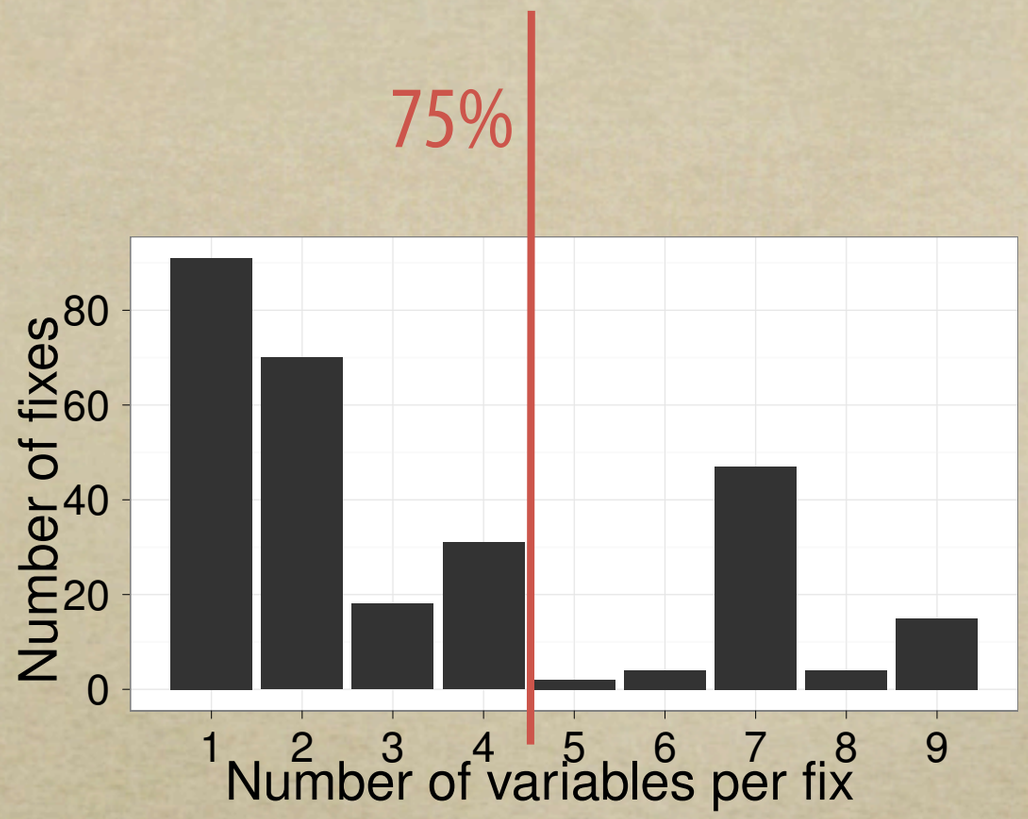
Apply Fix generation algorithm

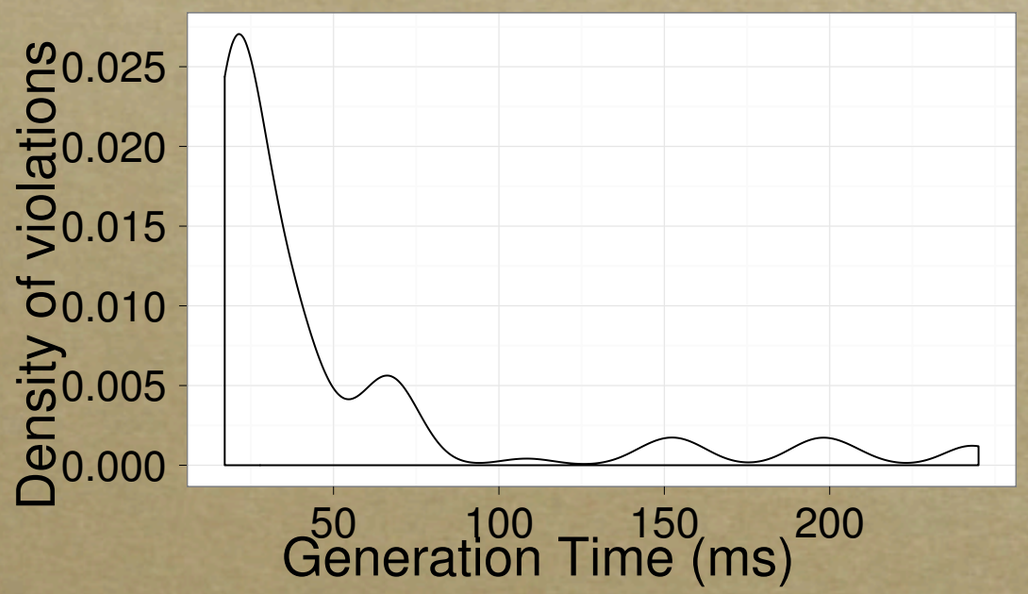
[n=true, x=true, z=true]
[n=true, y=true]

ecos → Google →


1000
750
500
250
0
virtex4
xilinx
ea2468
aki3068net
gps4020
arcom-viper
Options
Constraints
Violations

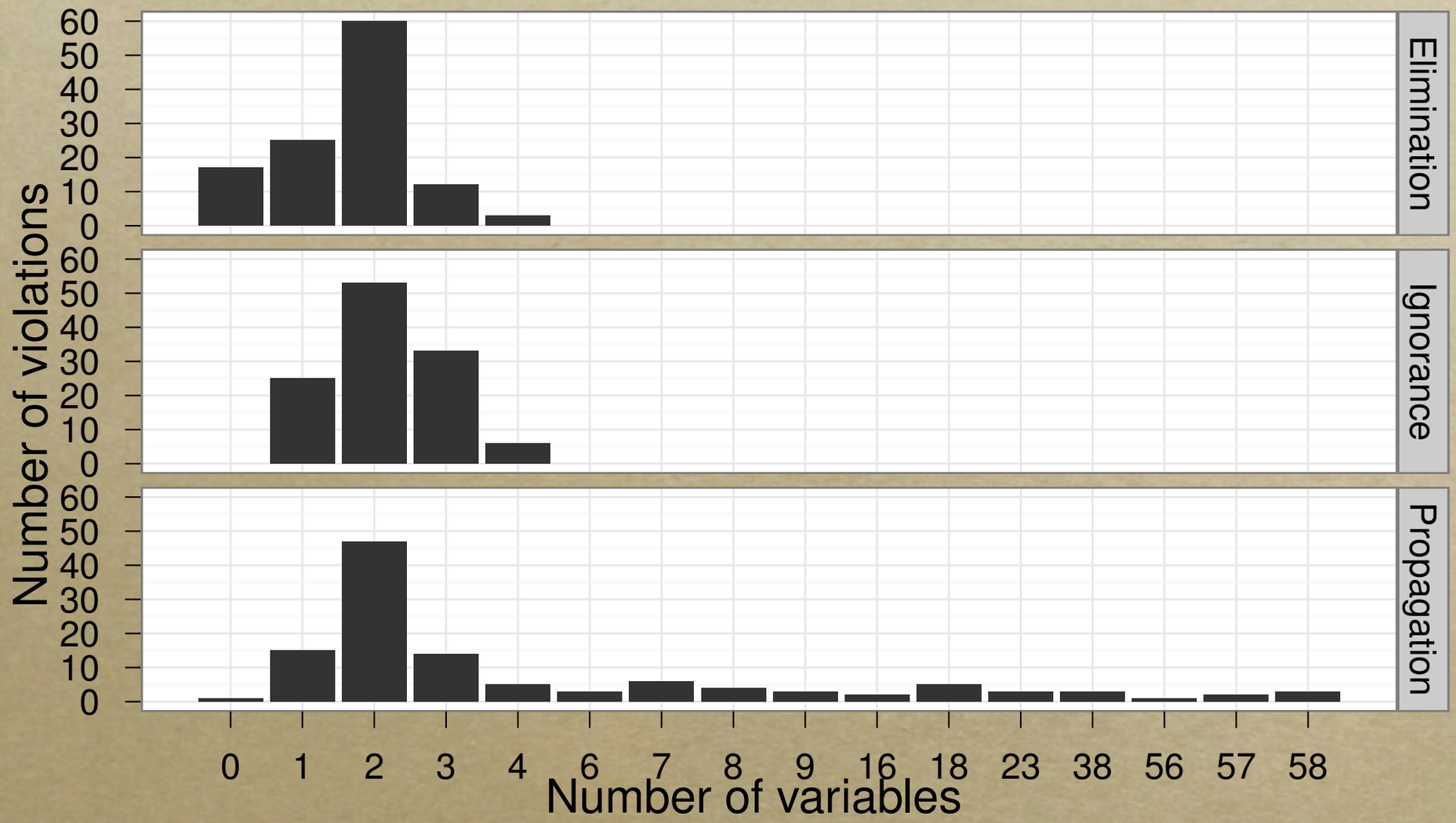






73% coverage of error resolution by configtool

100% coverage of error resolution by our tool



20ms

17 ignored

17ms

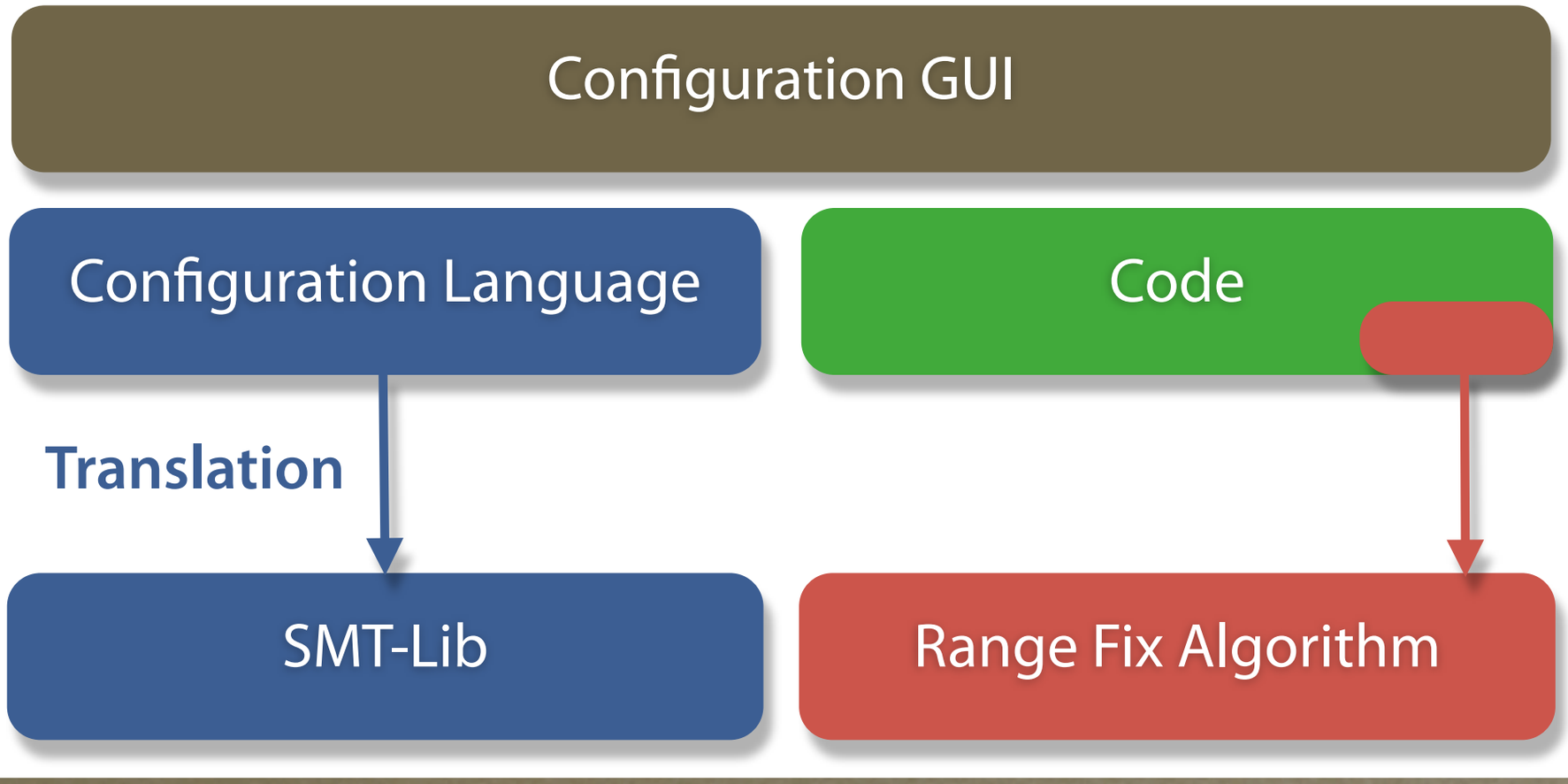
0 ignored

32% new errors

50ms

1 ignored

Configurator



Configurator

Configuration GUI

Configuration Language

Code

root@amd64testbox:/usr/src/linux

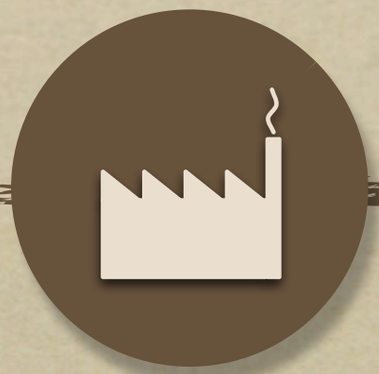
.config - Linux/x86_64 2.6.39-gentoo-r3 Kernel Configuration

USB Network Adapters

Arrow keys navigate the menu. <Enter> selects submenus --->.
Highlighted letters are hotkeys. Pressing <Y> includes, <N> excludes,
<M> modularizes features. Press <Esc><Esc> to exit, <?> for Help, </>
for Search. Legend: [*] built-in [ ] excluded <M> module < >

```
    < > USB CATC NetMate-based Ethernet device support (EXPERIMENTAL)
    < > USB KLSI KL5USB101-based ethernet device support
    < > USB Pegasus/Pegasus-II based ethernet device support
    < > USB RTL8150 based ethernet device support (EXPERIMENTAL)
    <M> Multi-purpose USB Networking Framework
    < >   ASIX AX88xxx Based USB 2.0 Ethernet Adapters
    -M-   CDC Ethernet support (smart devices such as cable modems)
    <M>   CDC EEM support
    <M>   CDC NCM support (NEW)
    < >   Davicom DM9601 based USB 1.1 10/100 ethernet devices (NEW)
    < >   SMSC LAN75XX based USB 2.0 gigabit ethernet devices (NEW)
    < >   SMSC LAN95XX based USB 2.0 10/100 ethernet devices (NEW)
    < >   GeneSys GL620USB-A based cables (NEW)
    < >   NetChip 1080 based cables (Laplink, ...)
    < >   Prolific PL-2301/2302 based cables (NEW)
    < >   MosChip MCS7830 based Ethernet adapters (NEW)
    <M>   Host for RNDIS and ActiveSync devices (EXPERIMENTAL)
    < >   Simple USB Network Links (CDC Ethernet subset)
    < >   Sharp Zaurus (stock ROMs) and compatible
    < >   Conexant CX82310 USB ethernet port (NEW)
    < > Intellon PLC based usb adapter (NEW)
    < > Apple iPhone USB Ethernet driver
    < > USB-to-WWAN Driver for Sierra Wireless modems (NEW)
    < > LG VL600 modem dongle (NEW)
```

<Select> < Exit > < Help >

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9/10 Completed
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Lace
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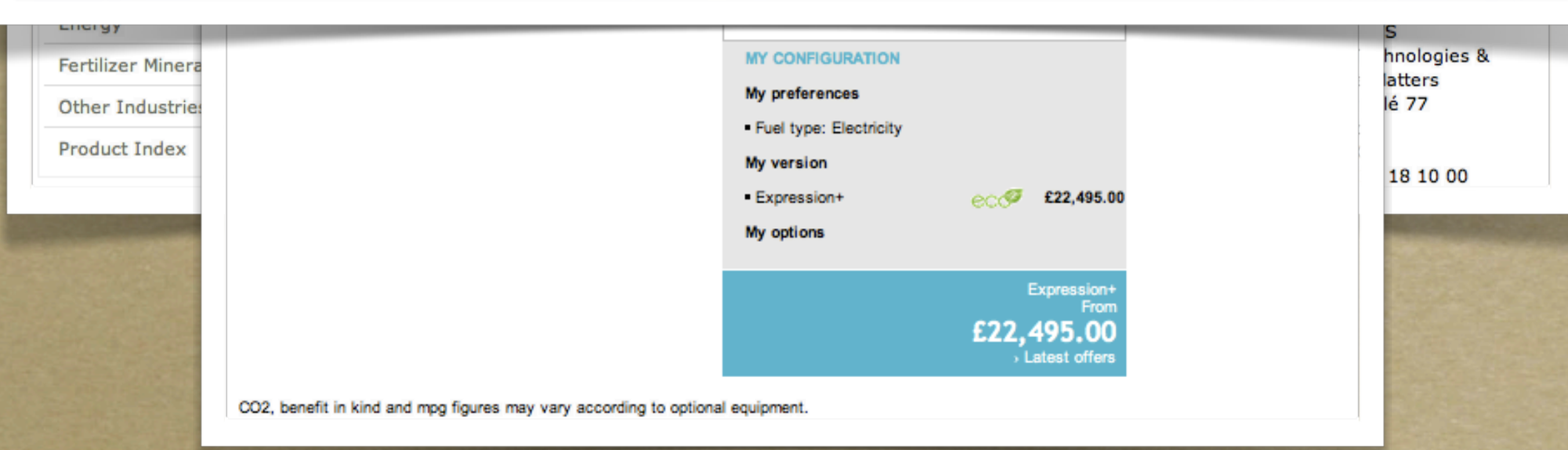
Jack Purcell CP Canvas
$70.00
Your Size
Add To Cart
Save
Share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Other Industrie
Product Index
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My preferences
▪ Fuel type: Electricity
My version
▪ Expression+
£22,495.00
My options
Expression+
From
£22,495.00
› Latest offers
CO2, benefit in kind and mpg figures may vary according to optional equipment.
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latters
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18 10 00


VISUAL SEARCH
MY ITEMS
FULL TEXT
MY MODEL
SET MY MODEL
PUBLISH THIS LOOK
MY MODEL
Body Shape
Measurement System
US System
Height
5' 5''
Weight
120
Bust Size
small-medium
Waist
well-defined
Adjust My Figure
0
Features
Younger
More Mature
Eyes
Almond
Round
Nose
Wider
Narrower
Lips
Thinner
Fuller
Hair Color
Hair Style
SAVE
SHOP FOR LOOKS
MY FACE
MY USER ID
BACKGROUND
DRAG ITEMS HERE
OR
OVER YOUR MODEL
SHORT DEMO
RECENTLY TRIED-ON

Unify

Software & Product Configuration

A. Hubaux

K. Czarnecki

C. Drescher

V. Ganesh

P. Heymans

L. Hvam

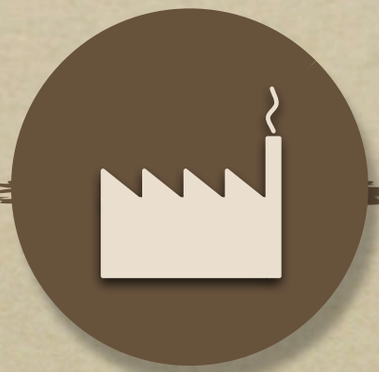
D. Jannach

T. Mannisto

L. Murta

T. Nguyen

M. Zanker



Knowledge Modelling

Automated reasoning

Complexity

Life cycle coverage

Knowledge evolution

?

Knowledge Modelling

Automated reasoning

Complexity

Life cycle coverage

Knowledge evolution

Knowledge Modelling

Automated reasoning

Complexity

Dagstuhl Seminar submitted

Life cycle coverage

Knowledge evolution