CORE FRAMEWORK UPDATES

Smart Home Day 2018 - 21/10/18 Ludwigsburg

ABOUT ME

- Henning Treu
- Eclipse SmartHome committer
- htreu
- @henningtreu

LICENSE

- Eclipse SmartHome license upgrade to EPL 2.0

MQTT SUPPORT

- Embedded broker
- MQTT bridge
  - System broker connection
  - Thing broker connection
- Generic MQTT topic thing
- Homie 3 & Home Assistant support with auto discovery

SEMANTIC METADATA

- Predefined ontology
- Semantics based on tags
- Hierarchy provides meaning
  - Tag “Kitchen” implies *Room, Indoor, Location*
- Built-in synonyms on types
- Custom synonyms on instances (Items)

NEW BINDINGS

- Bose Soundtouch
- OneWire
- Homematic (moved from openHAB)
- Generic Bluetooth LE support

BLUETOOTH LE SUPPORT

- Generic Bluetooth binding
- Extensible by specific device bindings
  - ***BlueGiga*** for USB dongles with BLED112 chip
  - ***blueZ*** for linux blueZ stack supported USB dongles.
  - ***Blukii*** for Blukii SmartBeacons

AUTHENTICATION

- OAuth2 client
  - Supports various OAuth authentication flows
- HTTP Authentication & Authorisation
  - HTTP handler chain for authentication, authorisation, and redirection.
  - AuthenticationManager validating Credentials
  - Highly customisable
  - Provides HTTP basic auth implementation

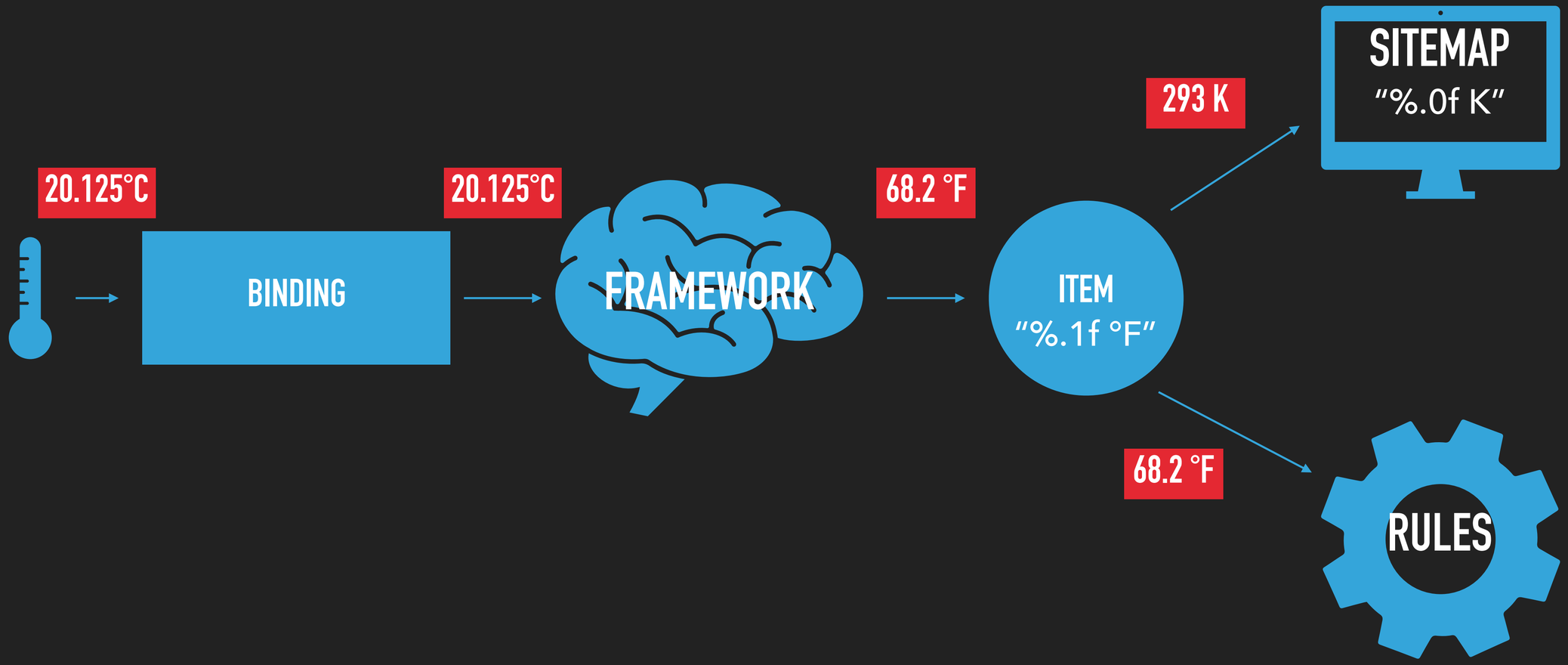
HTTP & WEBSOCKET CLIENT

- Common HTTP & WebSocket Client
  - Reduces Thread count
  - Own thread pool

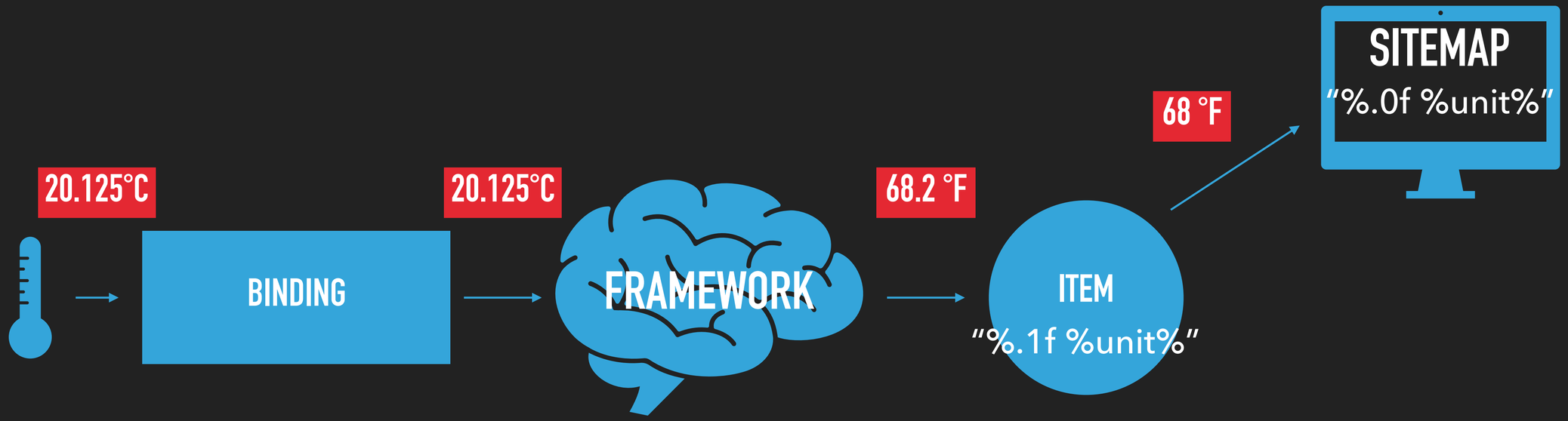
UNITS OF MEASUREMENT

- Built-in unit conversion
- Locale based default units
- Full DSL script support

UOM – UNIT CONVERSION

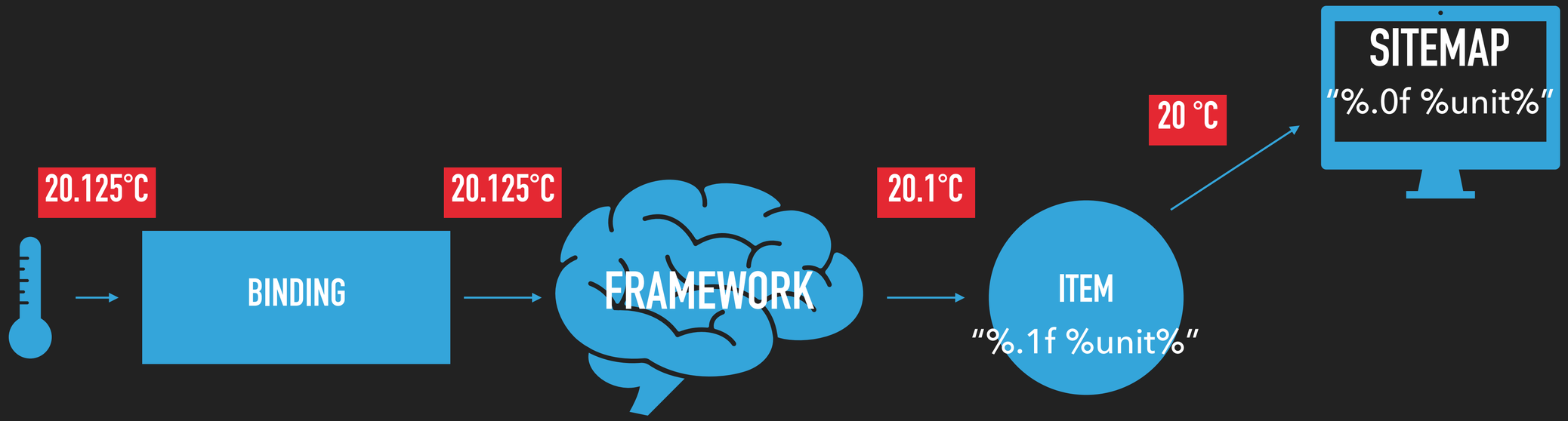


UOM – LOCALE BASED CONVERSION



Locale: en_US

UOM – LOCALE BASED CONVERSION



Locale: fr_FR

UOM – DSL SCRIPT SUPPORT

```
// define a QuantityType variable
var myTemperature = 20|°C

// convert a quantity state into a different unit:
var fahrenheit = myTemperature.toUnit("°F")

// calculations
var velocity = 100|km / 1|h
var acceleration = velocity / 1|h

// comparison
var truthy = 20|"°C" == 20|°C
var colder = new QuantityType("50 °F") < 20|°C
```

CODING STYLE #1

- Builder pattern for core model classes
  - Channel[Type]Builder, Thing[Type]Builder, BridgeBuilder, ChannelGroupTypeBuilder, ChannelDefinitionBuilder, …
  - Allows simple & safe API extension & immutable instances
  - Exposed to bindings via BaseThingHandler & ThingHandlerCallback:
    - #editThing
    - #createChannelBuilder[s], #editChannel

CODING STYLE #2

- No more Groovy
  - All tests were converted to Java
  - Base test classes: JavaTest & JavaOSGiTest
- Java 11 support
  - Still: warnings about illegal reflective access

OUTLOOK

- Separate ThingHandler & device configuration
- Introduce start levels
- New scheduler

ESH COMMUNITY ROCKS.
THANK YOU!

htreu