Latest news

from

the ERLANG Group at Ericsson

Erlang User Conference Stockholm 2011

Roadmap (as always preliMINary)

service release r14b04 5:th October

major release r15b 14:th December

service release r15b01 March 2012

service release r15b02 June 2012

service release r15b03 October 2012

...

major release r16b Q4 2012 – Q2 2013

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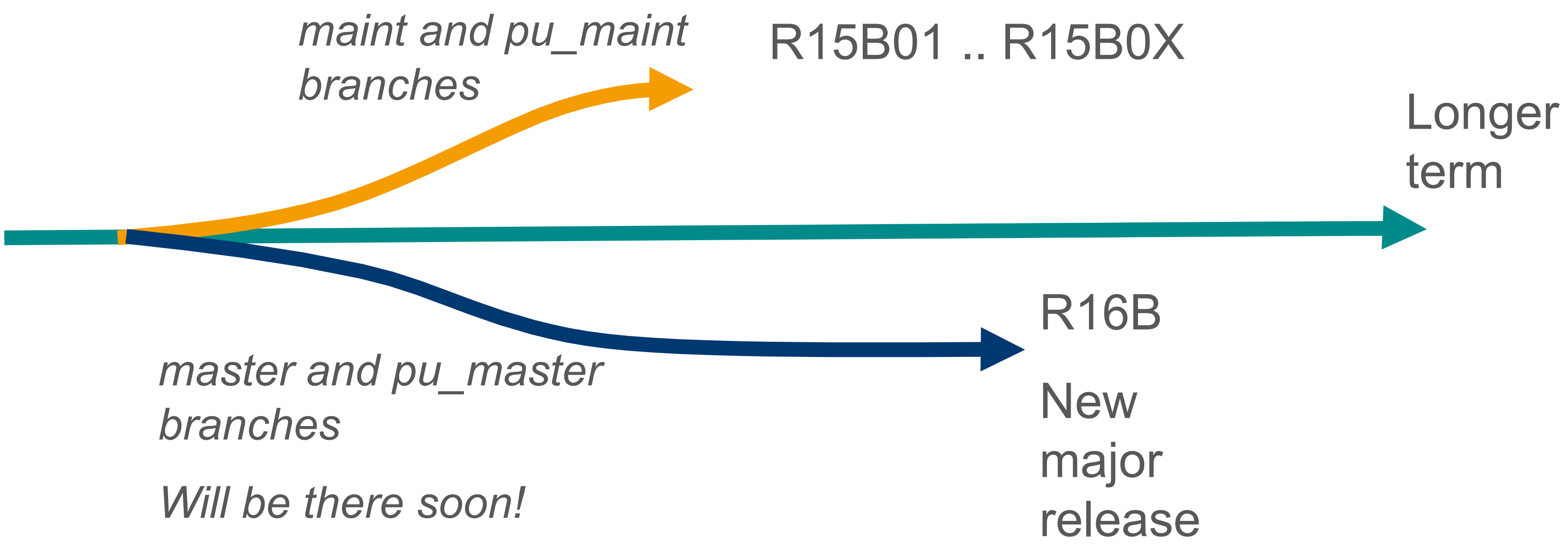
service release R14B04 continued

- At least in *number* of merges to the dev branch, there are more user contributions than fixes from the OTP team!
- Only a few new features
  - –...which is what you’d normally expect from a service release
- A new branching strategy will also be visible to the open source community

New branching strategy



maint and pu_maint branches

R15B01 .. R15B0X

Longer term

R16B

New major release

master and pu_master branches

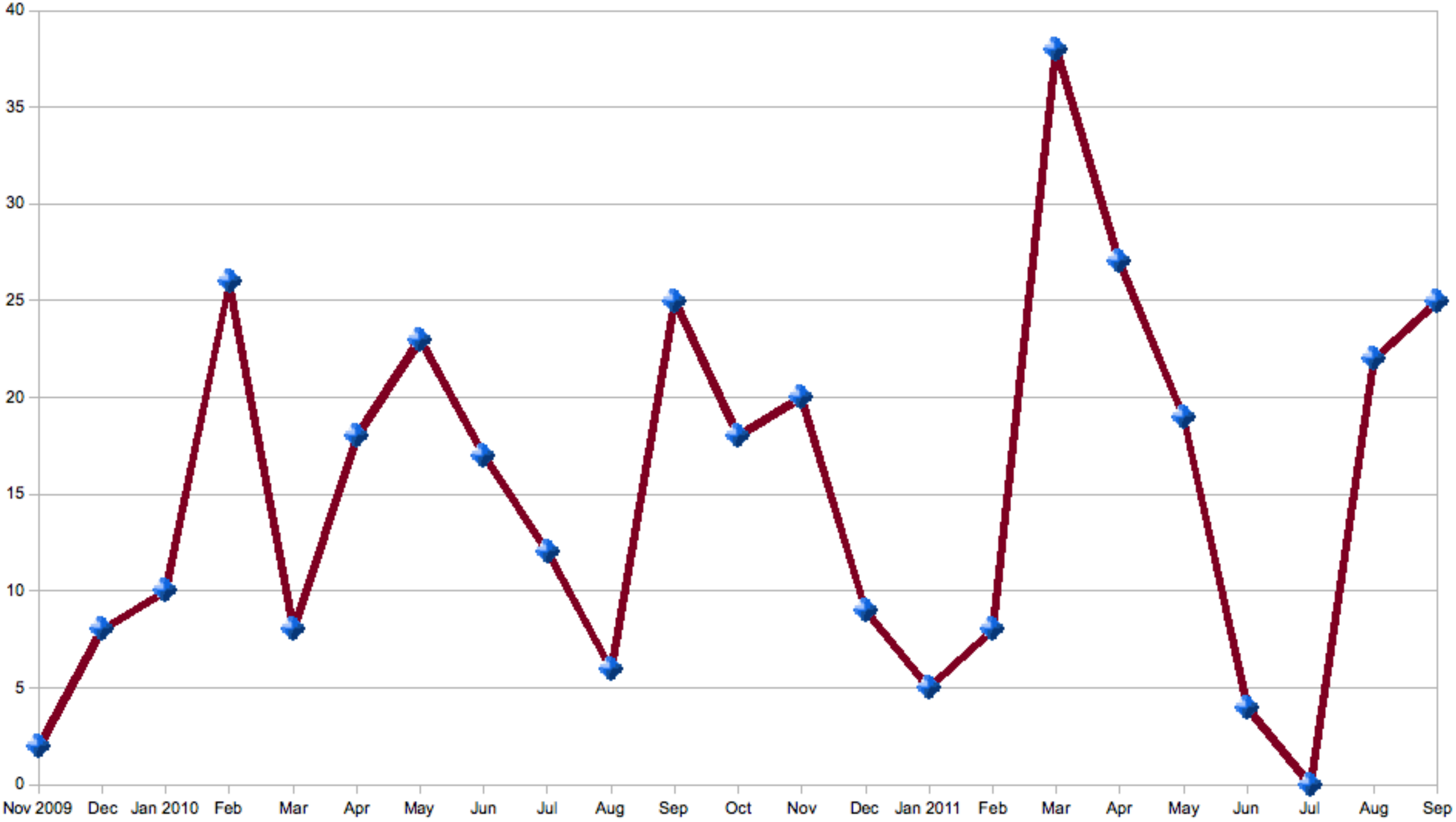
Will be there soon!

master branch (with an associated pu branch) -> for the next major release

> ***maint*** branch (with an associated pu branch) -> for the next service release, merged into master when needed

A user contribution will be put in one of the pu branches, depending on the nature of the contribution

Open source contributions in the last years



R15B

- Line numbers in exceptions
- Parallel make of OTP possible
- Increased SMP performance and scalability
  - New implementation of atomic variables in VM (mostly assembler)
  - Lock free data structures used more in the VM
  - Enhanced memory allocation in VM
- Better performance due to multiple return values internally in VM
- Full 64bit windows support
- Enhanced SCTP support
- Release handler improvements
- Improved ASN.1 speed
- Observer GUI
- Old SSL implementation removed and inviso deprecated

Line Number Info

- Generated as default by compiler
- Loader puts info in internal tables used when an exception or call to `erlang:get_stacktrace` occurs
- Size of .beam file increases with ~ 5 %
- Size of loaded code increases with 10% in a 32 bit VM (less percentage in a 64 bit VM)
- No extra cost in runtime.
- New EEP describes in detail how it works.

Line Number Info continued

- Introducing a small ”harmless” incompatibility
- A stack trace will change from the format:
- `[{Module,Function,Arity}, ...]`
- To the new format:
- `[{Module,Function,Arity,LocationInfo}, ...]`
- Where `` `LocationInfo` `` is a property list :
- `[{file,FilenameString},{line,LineNumber}]`

Line Number Info, Demo

example.erl

```
-module(example).
    -export([m/1]).
    -include("header.hrl").

   m(L) ->
       {ok,lists:map(fun f/1, L)}.  %Line 6
```

header.hrl

```
f(X) ->
   abs(X) + 1.        %Line 2
```

```
Eshell V5.8.4  (abort with ^G)
1> c(example).
{ok,example}
2> example:m([a]).
** exception error: bad argument
     in function  abs/1
        called as abs(a)
     in call from example:f/1 (header.hrl, line 2)
     in call from lists:map/2 (lists.erl, line 948)
     in call from example:m/1 (example.erl, line 6)
3>
```

and the future beyond R15

- Started joint work with SICS about LLVM, HiPE and JIT
- EU project RELEASE just started (more on next slide)
- Better support for NUMA architectures
- Builtin map data structures are investigated
  - Alternative to stdlib gb_sets etc
  - Alternatives to records (?)
- Improve code change on many cores
- Improved native interfaces
- Scale better over more and more cores
- Improved string handling
- Sendfile
- ...and much more, ...

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