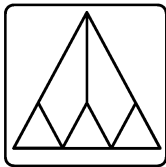


The State of Stratego/XT



Stratego/XT

Delft University of Technology
Department of Software Technology

Stratego User Days 2006
November 30

0.17?

- goals: portability, performance, standards
- commits: 646
- issues: closed 150 of 226
- release: Real Soon Now

Is the release cycle a problem?

- Stratego/XT 0.16 released November 4th, 2005 . . .
- in practice, everybody is using 0.17 pre-releases
- probably not a good thing

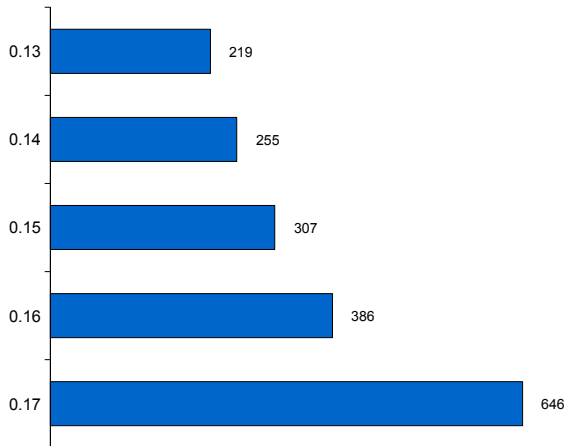
Has development slowed down?

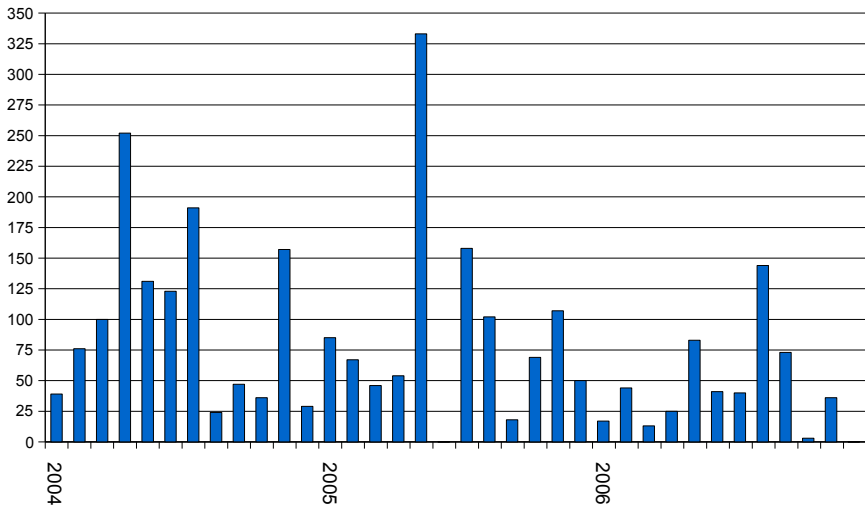
- goals: portability, performance, standards
- commits: 646
- issues: closed 150 of 226
- release: hopefully 2006, very early 2007

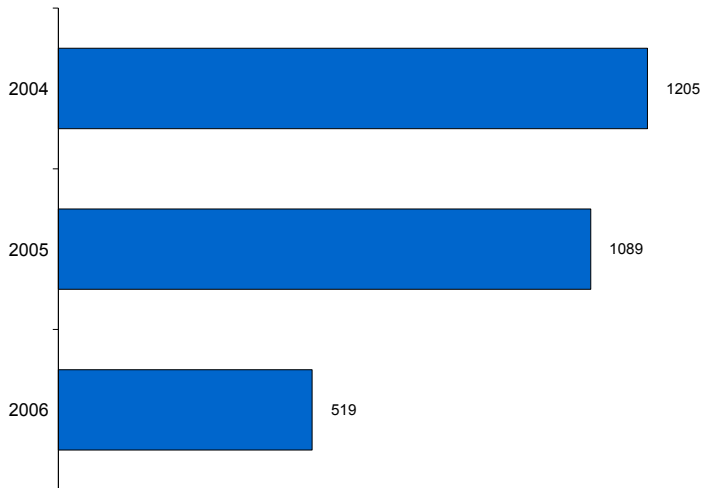
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Delft University of Technology

- for external users nothing will change
- ... except for institute independent URLs and email
- still fully committed to Stratego/XT

- stratego core language
- compiler produces standard C
- no more nested functions!
 - solves OS X and stack protection issues
- no more setjmp/longjmp!
 - solves portability and performance issues
- pretty-print table compiler
- libstrc
- working towards parallel compilation

⇒ talk Eelco Visser

from XTC to libraries

- libraries for parsing, pretty-printing, format-checking, etc
 - libstratego-`{sgr, gpp, rtg, tool-doc, xtc}`
- major performance improvement
 - overhead of processes, serialization, allocation, parse tables
 - e.g. parse-unit
- separate package for deployment
 - more portable, don't need full Stratego/XT anymore
- api docs available online
- are we going to drop the idea of small tools?
 - definitely not

⇒ talk Martin Bravenboer

only some minor changes

- 'assignment'

```
where
  z := <add> (y, z)
```

- rule syntax in let

```
let Foo : p1 -> p2
  in ...
end
```

- open aterm from file (cgen-aterm)

```
import-term(./test104.trm)
```

new features

- libstri, separation of shell and interpreter
- stri ~ strc
- uses libstrc: much faster
- load native libraries

```
stratego> :load libstratego-lib  
stratego> :load /usr/lib/libjava-front.la
```

future plans

- include interpreter in Stratego/XT (library)
- maybe also include shell?

new aterm and sdf2-bundle

- now building straight from CWI repositories
- includes gcc 4.x aliasing patches
- fixes gnu make 3.81 sed issues
- maybe also include 64 bit fixes?

new sdf features

- argument specific priorities
Expr "?" Expr ":" Expr -> Expr
<0,4> >
Expr "=" Expr -> Expr
- case insensitive literals
Expr 'or' Expr -> Expr cons("Or")

removed features

- n+

Microsoft Windows + Cygwin

- shared libraries

Microsoft Windows

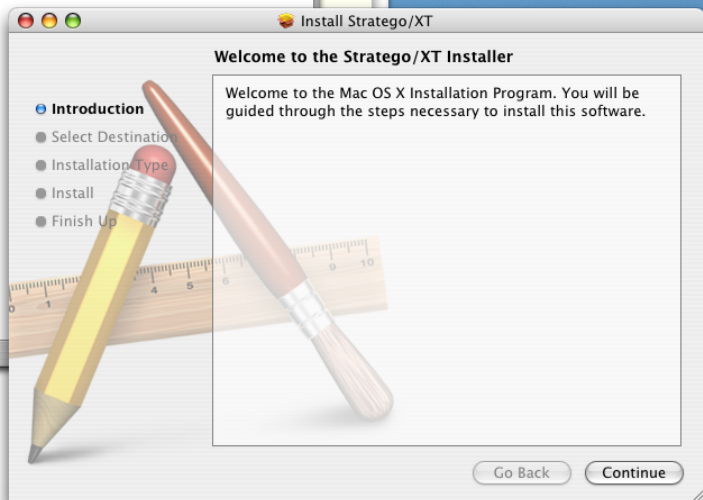
- MinGW, MSYS (C99, POSIX, POSIX+XSI)
- binaries relocatable under conditions
- installer?

Mac OS X

- support for i686
- installer: creation still has to be done by hand
- installer: i686 + ppc, not relocatable

Nix Buildfarm

- cygwin and MSYS/MinGW support



Microsoft Windows + Cygwin

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Nix Buildfarm

- cygwin and MSYS/MinGW support

new, cool, powerful, sexy hardware

- 1 server
 - 1TB disk space, Intel Core 2 Duo, 2.67GHz
- 5 build machines (yes, 5!)
 - Intel Core 2 Duo, 2.67GHz, 2GB memory
- 2 mac build machines
 - Mac mini 1,83-GHz Intel Core Duo-processor

major professionalization of the buildfarm

- testing, program analysis, profiling, monitoring, code coverage
- building and testing variants based on configuration space
- fault isolation
- single, parallel builds (interactive)

- Stratego/XT 0.16: Components for Transformation Systems – PEPM 2006
- Stratego/XT 0.16. A Language and Toolset for Program Transformation – Science of Computer Programming 2006.
- Stratego: A Programming Language for Program Manipulation – ACM Crossroads 2006
- Programvarefabrikker og Programtransformasjon – PC World Norge

- Stayin' Alert: Moulding Failure and Exceptions to Your Needs – GPCE 2006
- DSAL = library+notation: Program Transformation for Domain-Specific Aspect Languages – DSAL 2006
- Assimilating MetaBorg: Embedding language tools in languages – GPCE 2006
- Building Java Transformations with Stratego/XT – OOPSLA/GPCE 2006
- Declarative, Formal, and Extensible Syntax Definition for AspectJ – OOPSLA 2006
- A Commensalistic Software System – Onward OOPSLA 2006

- Attribute Grammars for Modular Disambiguation – ICCP 2006
- C-Transformers - A Framework to Write C Program Transformations. ACM Crossroads
- Algorithmic Skeletons for Stream Programming in Embedded Heterogeneous Parallel Image Processing Applications – Parallel and Distributed Processing Symposium, IPDPS 2006
- Generalized Type-Based Disambiguation of Meta Programs with Concrete Object Syntax – GPCE 2005
- Strategic Graph Rewriting: Transforming and Traversing Terms with References – WRS 2006
- Semantics of static pointcuts in AspectJ – POPL 2007

PHP-front, PHP-sat

- Eric Bouwers
- Google Summer of Code
- working towards high quality PHP grammar
- malicious code vulnerability (injection attacks)
 - type-state for security
- patterns
 - style
 - performance
 - correctness

⇒ talk Eric Bouwers

master students Utrecht University

- Bogdan Dumitriu (break, continue, throw, pointer analysis)
- Lennart Kats (bytecode/source compiler)
- Mart Kolthoff (loop vectorization for C programs)
- Raymon van Wanrooij (software composition)
- Sander Mak (DSL interaction)

master students Delft University of Technology

- Danny Groenewegen (web application security)
- Jonathan Joubert (JAG)
- Jeroen Dobbe (game DSL)

Transformations for abstractions

- 1 postdoc position (3 years)

Model-driven software evolution

- 1 postdoc position (3 years)
- 2 PhD student positions (4 years)

Please contact us if you are interested.

... or know someone who might be interested