



Connecting things together

C++ Kernel Status

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Overview

- cppTango Status
 - Development branches
 - Tango 9 LTS
 - cppTango 9.3.4
- Tango Source Distribution Status
- Packages
- Community Life
- Ideas for the Future

Development branches

tango-9-lts	9.3-backports
Future cppTango 9.4	(9.3.x development branch)
Requires C++11 at least	Does not require C++11 (Can be compiled on old compilers but might need a more recent CMake version)
Not binary compatible with cppTango 9.3.x	Binary compatible with cppTango 9.3.x
Travis CI: <ul style="list-style-type: none">• Latest LLVM (10.0.1)• Latest GCC (10.1.0)• Ubuntu 20.04• Debian 8, 9 , and 10	Travis CI: <ul style="list-style-type: none">• Debian 7, 8, 9 , and 10
Appveyor: <ul style="list-style-type: none">• win32 msvc14 and msvc 15• x64 msvc14 and msvc15	Appveyor: <ul style="list-style-type: none">• win32 msvc9, msvc10, msvc12, msvc14 and msvc 15• x64 msvc9, msvc10, msvc12, msvc14 and msvc 15

Tango 9 LTS

- Future cppTango 9.4 release
 - Breaks ABI (i.e. not compatible with 9.3)
- Developed on tango-9-lts branch
 - Since Mar 29, 2019 (9.3-backports branchout)
- Improvements in all areas
 - Bugfixes and features
 - Software quality and safety
 - Tooling and CI infrastructure

Tango 9 LTS - New soname schema

- New soname is **libtango.so.94** ([#593](#))
 - In 9.x releases we used libtango.so.9
- Both versions can coexist in the same system

```
-rw-r--r-- 1 236316050 libtango.a
lrwxrwxrwx 1          14 libtango.so -> libtango.so.94
lrwxrwxrwx 1          17 libtango.so.94 -> libtango.so.9.4.0
-rw-r--r-- 1 83361752 libtango.so.9.4.0
```

Tango 9 LTS - Bugfixes

- Solutions may differ from 9.3.x ones
 - No ABI restrictions
 - We can follow the “boy scout rule” and refactor
- Some bugs are resolved on 9.3-backports first and wait for forward port

- Memory leak in `Attribute::get_att_device_class()` ([#678](#))
- Interface name collision on `MSC_VER = 1900` ([#654](#))
- Crash when reading a forwarded State attribute ([#552](#))
- Crash during alarm evaluation if attr. value is not set ([#555](#))
- Event interworking with device / server restart ([#694](#), [#573](#))
- Race cond between polling threads and user threads pushing events ([#641](#))

Tango 9 LTS - Changes & features

- Add `server_init_hook()` method ([#551](#))
 - Called when admin and all other devices are exported
 - `void MyDev::server_init_hook() override;`
- Support for grouping remote devices ([#608](#))
 - `group.add("tango://remote:20000/dev/*");`
- Expose `Group::enable/disable` public API ([#577](#))
- Respect `TANGO_LOG_PATH` set in rc files ([#575](#))
- Always allow attr. alarm thresholds change ([#692](#))
- Improved `cppzmq` compatibility ([#561](#), [#615](#))
- Allow building on OpenBSD ([#706](#))

Tango 9 LTS - Code quality & safety

- Remove fallback snprintf implementation ([#659](#), [#650](#))
- TACO support cleanup ([#655](#))
- Correct interdependent tests ([#634](#))
- Fix many spelling errors([#623](#), [#646](#), [#571](#))
- Prevent duplicating defines ([#643](#))
- Output state safely ([#579](#))
- Resolve all compilers warning ([#604](#), [#581](#))
- SVN keywords cleanup ([#582](#))
- Make `using namespace std;` optional ([#528](#))
 - Including tango.h no longer brings whole std ns into scope
 - Controlled with CMake flag for backwards compatibility

Tango 9 LTS - CMake and tools

- Generate tests using Python 3 ([#673](#))
- Add option to disable building the test suite ([#668](#))
- **Require C++11 and cmake 3.7** ([#626](#), [#653](#), [#580](#), [#587](#))
- Add switch to disable MMX ([#676](#))
- **Reset database and device servers for each test** ([#640](#))
 - Tests can run in parallel
- Compile with -Og option in Debug mode ([#612](#))
- Fix CMAKE_BUILD_TYPE inconsistencies ([#627](#))
- **Precompile tango.h** ([#526](#), [#607](#), [#614](#))
 - Build time reduction

Tango 9 LTS - CMake and tools

- Windows-specific changes:
 - Rework static/shared variants into a configure-time build-switch ([#688](#))
 - Allow different paths for CPPZMQ and ZMQ ([#642](#))
 - Only install PTHREAD_WIN files if enabled ([#644](#))
- CORBA code generation:
 - Generate code in build tree ([#624](#))
 - Correct failure detection ([#687](#))
 - Do not require "sed" to patch generated code ([#638](#))

Tango 9 LTS - CI infrastructure

- Dropped support for Debian 7 and MSVC older than msvc14
- Build with latest GCC (10.1.0) to detect warnings ([#717](#))
- Build with latest Clang (LLVM 10) to detect warnings ([#700](#))
- Appveyor: Do not wait for RDP after failure ([#669](#))
- Add testing with Ubuntu 20.04 ([#652](#))
- Compile with -j option to speed up the Travis build ([#645](#))
- Travis: Do not run tests if build fails ([#601](#))
- Travis: Fix coveralls ([#599](#))
- Add testing with Debian 10 ([#562](#))

Tango 9 LTS - WIPs and backlog

- Many more bugfixes in review ([#721](#), [#703](#), [#698](#), [#697](#), [#685](#), ...)
- **Automated ABI/API compliance check ([#662](#))**
- Better const correctness ([#566](#), [#622](#), [#497](#))
- Appveyor: Online deployment on tag ([#616](#))
- Deploy Doxygen docs to Github pages ([#545](#))
- Include 'description' in CommandInfo ([#257](#))
- Migrate API doc to Sphinx ([#365](#))

Upcoming cppTango 9.3.4

Bugfixes since 9.3.3:

- Fix various spelling errors ([#621](#)), ([#647](#))
- Fix cmake build inconsistencies ([#629](#))
- Fix snprintf detection ([#658](#))
- Avoid compile error in MS VC 15 ([#664](#))
- Fix race conditions between polling threads and user threads pushing events ([#665](#))
- Fix crash during alarm state evaluation if attribute value is not set ([#681](#))
- Fix issue where unsubscribing in push_events led to API_EventTimeout ([#699](#))
- Remove extra comma to not trip very old compilers ([#709](#))
- Fix blind event clients after device restart ([#702](#))
- Fix event subscription with obscure network configurations ([#716](#))

Upcoming cppTango 9.3.4

Changes since 9.3.3:

- Run tests on Debian buster/10
- Document contributing process ([#639](#))
- Add compile switch to not require MMX support ([#674](#))
- Add option to disable building the test suite ([#689](#))
- Use feature tests for checking if we have `zmq::socket::disconnect` ([#598](#))
- Be compatible with all in-use cppzmq versions ([#561](#))

Debian packages:

- [9.3.4-rc4](#) for Debian unstable
- Includes cppTango, Database, AccessControl, Starter, Test
- Feedback welcome!

Tango Source Distribution

- Newest release candidate: [9.3.4-rc6](#)

Build system fixes (autotools/automake):

- Fix finding MariaDB SQL server with non-bash shells ([#49](#))
- Added autotools check for a correct cppzmq version ([#54](#))
- Use pkg-config for detecting zlib ([#55](#))
- Default to /usr for omni automake checks ([#66](#))
- Fix java version detection to only accept java 8 ([#64](#))
- Fix database connection test ([#65](#))
- Warn on buggy mariadb client versions ([#69](#))
- Add sed detection ([#81](#))

Miscellaneous:

- Update Readme for cppzmq issues ([#50](#))
- Add the source of the documentation ([#42](#))
- Various documentation fixes from latest [tango-doc](#)

Tango Source Distribution

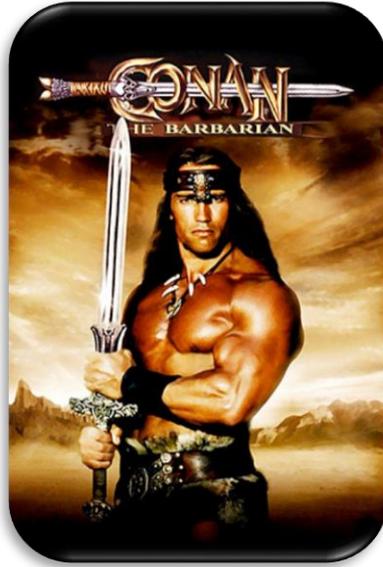
Updated packages:

- [tango_admin](#) 1.15
- [ATK](#) 9.3.14
- [Astor](#) 7.2.10
- [cppTango](#) 9.3.4-rc6
- [TangoDatabase](#) 5.15
- [Jive](#) 7.23
- [JSSHTerminal](#) 1.16
- [JTango](#) 9.6.0
- [Pogo](#) 9.6.27
- [Rest Server](#) 1.22
- [Starter](#) 7.3

Conan Packages



Conan Packages



- Conan: C/C++ Package Manager
- Work initiated by Marius Elvert (Software Schneiderei)
- More details in following Marius' presentation

Conda Packages



Conda Packages

- Tango C++ library Conda package needed to build pyTango conda packages
(<https://github.com/tango-controls/pytango-conda-recipes>)
- Gitlab (Tiago) → Github (tango-controls)
- Pytango conda packages were built from Tango Source Distribution
- New packages for more reactivity when a component is updated:
 - tango-idl conda package
 - tango-test conda package
 - cppTango conda package
 - Already available on <https://anaconda.org/tango-controls>
 - Recipes: <https://github.com/tango-controls/tango-conda-recipes>
 - more packages might come if needed/requested
- Still some issues to build pytango conda packages for all python versions
([pytango-conda-recipes#1](#))

Community Life



Tango Kernel Teleconf Meetings



<https://www.artstation.com/artwork/nQOEko>

Tango Kernel Teleconf Meetings



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Tango Kernel Teleconf Meetings

- On 2nd and 4th Thursday of the month at 15:00 (Paris time)
- Agenda and minutes available on Github:
<https://github.com/tango-controls/tango-kernel-followup>
- Status of recent development (cppTango, JTango, pyTango, ...)
- Technical discussions
- Define priorities

Documentation

The screenshot shows the Tango Controls documentation website. The left sidebar contains a navigation menu with the following items: Welcome to Tango Controls documentation!, Authors, Overview, Installation, Getting Started, Developer's Guide, Tools and Extensions, Administration (expanded), Overview, Deployment (expanded), Starting a Tango control system, The Starter device, Running a device server without SQL database, Multiple database servers within a Tango control system, The property file syntax, High Availability, Tango Controls versions in use (expanded), Services, Maintenance, Tutorials and How-Tos, Reference, and Read the Docs. The main content area is titled 'Tango Controls versions in use' and includes a breadcrumb trail: Docs » Administration » Deployment » Tango Controls versions in use. A link to 'Edit on GitHub' is visible in the top right. The page content lists supported versions for four different systems: ALBA Synchrotron, DESY, Elettra, and ESRF accelerator, each with a list of supported Tango Controls, PyTango, and JTango versions and operating systems. At the bottom right of the sidebar, there is a version selector set to 'v: latest'.

Tango Controls
latest

Search docs

Administration

Deployment

Tango Controls versions in use

Services

Maintenance

Tutorials and How-Tos

Reference

Read the Docs v: latest

Docs » Administration » Deployment » Tango Controls versions in use [Edit on GitHub](#)

Tango Controls versions in use

Intended audience: all

ALBA Synchrotron:

- Tango Controls versions: 7.2.x/8.1.x/9.2.x/9.3.3
- PyTango versions: 7.2.x/8.1.x/9.2.x
- JTango versions: Released with 7.x and 8.1.x c++ version/8.4/9.2.x/9.3.x/**
- OS: *nix/Windows

DESY:

- Tango Controls versions: 9.2.x
- PyTango versions: 9.2.x
- JTango versions: 9.1.x (Released with c++ 9.2.5)
- OS: *nix/Windows

Elettra:

- Tango Controls versions: 7.2.x/8.1.x/9.2.x/9.3.3
- PyTango versions: 7.2.x/9.2.x/9.3.2
- JTango versions: 9.1.x (Released with c++ 9.2.5)
- OS: *nix

ESRF accelerator:

- Tango Controls versions: 9.3.4-rc4a
- PyTango versions: 9.3.1
- JTango versions: 9.5.18-SNAPSHOT
- OS: *nix

MAX IV Laboratory:

- Tango Controls versions: 9.3.3
- PyTango versions: 9.3.1
- JTango versions: 9.3.x

Documentation

The screenshot displays the Tango Controls documentation website. On the left is a dark sidebar with a search bar at the top. Below the search bar are several menu items, including 'Welcome to Tango Controls documentation!', 'Authors', 'Overview', 'Installation', 'Getting Started', 'Developer's Guide', 'Advanced', and 'Tools and Extensions'. The 'Developer's Guide' section is expanded, showing sub-items like 'Overview', 'General guidelines', 'Tango Client', 'Device Servers', 'Debugging and Testing', 'Advanced', 'Threading', 'Tango Device Server Model', 'Tango REST API', 'The TANGO IDL file: Module Tango', 'Reference part', 'Known issues', 'Tango Core C++ Classes Reference Documentation', and 'Contributing'. At the bottom of the sidebar is a 'Read the Docs' button with a version selector set to 'v: latest'. The main content area on the right has a breadcrumb trail: 'Docs » Developer's Guide » Advanced » Known issues'. A green 'Edit on GitHub' link is in the top right. The main heading is 'Known issues', followed by the text 'Intended audience: developers'. Below this are 'Previous' and 'Next' navigation buttons. The main text contains a copyright notice: '© Copyright 2017-2019, Tango Community, Creative Commons Attribution 4.0 International (CC BY 4.0) Revision ffc42de5.' and a footer note: 'Built with Sphinx using a theme provided by Read the Docs.'

Documentation

➤ New pages:

✓ Tango Controls versions in use:

<https://tango-controls.readthedocs.io/en/latest/administration/deployment/versions-in-use.html>

✓ Known issues and workarounds:

<https://tango-controls.readthedocs.io/en/latest/development/advanced/known-issues.html>

➤ Contributions welcome!

Tango-Controls forum

<https://www.tango-controls.org/community/forum>

NEVER HAVE I FELT SO
CLOSE TO ANOTHER SOUL
AND YET SO HELPLESSLY ALONE
AS WHEN I GOOGLE AN ERROR
AND THERE'S ONE RESULT
A THREAD BY SOMEONE
WITH THE SAME PROBLEM
AND NO ANSWER
LAST POSTED TO IN 2003



<https://xkcd.com/979>

Ideas for the Future

➤ Distributed Tracing ([OpenTracing](#), [APM](#))

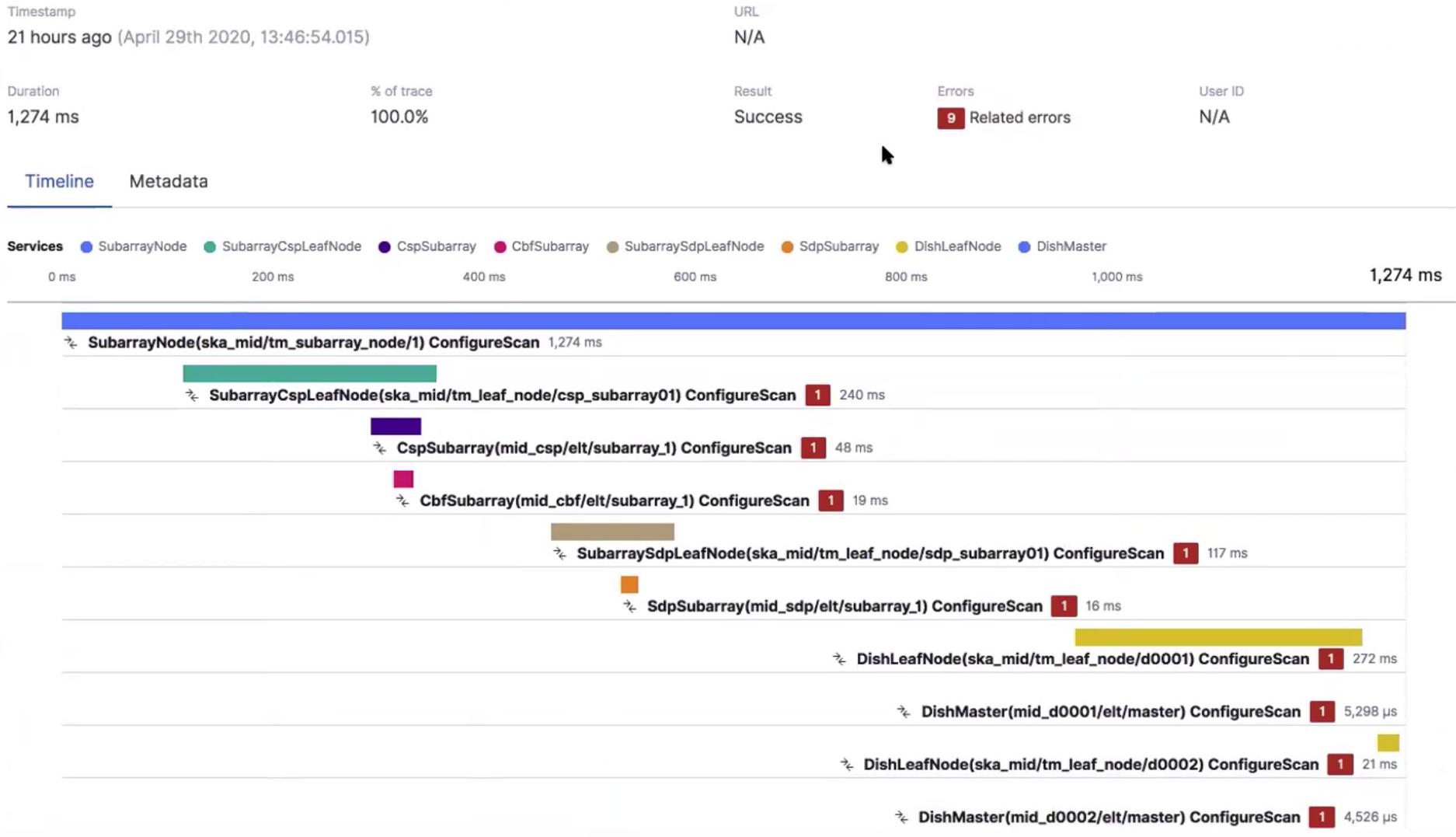
- Proposal from SKAO, relayed by SKA-ZA

More details on <https://github.com/tango-controls/TangoTickets/issues/35>

OpenTracing in Tango → Possibility to use existing tracing tools:

- [zipkin](#)
- [jaeger](#)
- [lightstep](#)

Ideas for the Future



Ideas for the Future

omniORB 4.3.0 beta 1 [released](#)

Changes since omniORB 4.2.x

omniORB 4.3 has a number of new features and changes:

- A **new omniORB-specific HTTP / HTTPS transport**, with a number of capabilities:
 - . **Full encapsulation of GIOP messages in HTTP.**
 - . **Support for web proxies**, transparent web proxies, reverse proxies.
 - . For cases where security is important but an end-to-end HTTPS connection cannot be assured, **support for in-message encryption.**
- **Support for vast CORBA messages on 64 bit platforms.**
- Support for PyPy in omniidl and omniORBpy.
- omniCallDescriptor::current() and omniCallHandle::current() to access information about the current call on a server.
- The sslContext class is now in the omni namespace.



Connecting things together

Thank you!

Any questions?

Acknowledgement:

Michal Liszcz, Thomas Braun, Igor Khokhriakov, Reynald Bourtembourg, Anton Joubert, Sébastien Gara, Marius Elvert, Dmitry Egorov, Katarzyna Rzęsikowska, Andy Goetz, mellguth2, Tiago Coutinho, Graziano Scalamera, Lorenzo Pivetta, Frédéric Picca, Emmanuel Taurel, Giacomo Strangolino, Zbigniew Reszela, Hélder Ribeiro, Alexander Senchenko, Sergi Rubio, Geoff Mant, Johan Venter, Jairo Moldes, Pascal Verdier, Jean-Luc Pons, Carlos Pascual, Nicolas Tappret, Guifré Cuni, Michał Gandor, Piotr Goryl, and so many others for their contributions (PR, bug reports, code reviews, comments, ...)

<https://www.github.com/tango-controls/cppTango/issues>

<https://www.github.com/tango-controls/TangoSourceDistribution/issues>