

# Release This!

## Tools for a smooth release cycle

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# Problem background

*Stumbling though a release cycle*

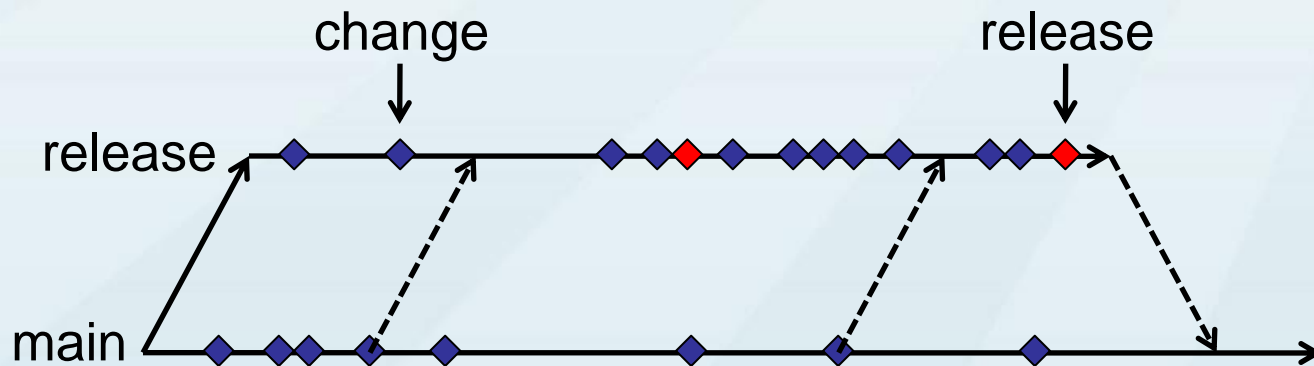


# Project overview

Duration	2.5 years
Developers:	120 local 80 remote
QA staff	10 local 60 remote
Head revision	350 GB 700.000 files
Change / week	15 GB
Depot size	2 TB

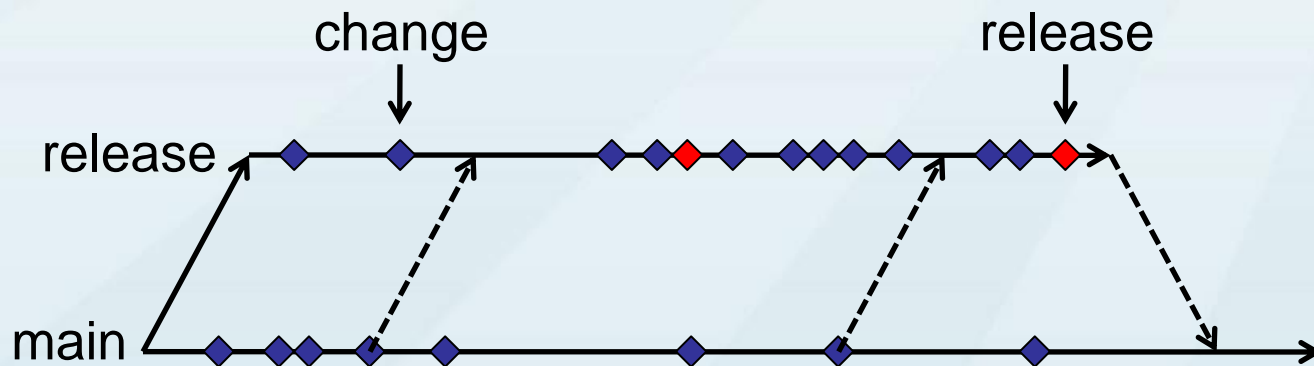
# The old approach

- Create a release branch a month before each deliverable.
- Test and fix (mostly) on the branch
- Release whenever branch has stabilized enough
- Hope that happens before the deadline



# The old problems

- Large head revision makes branch switching painful
- Hard to test changes break the release build
- No control over what goes on the branch when
- Hard to find out which changes made it into which build
- Panic and chaos surround each release



# An improved process

*A steady crawl with the occasional scramble*

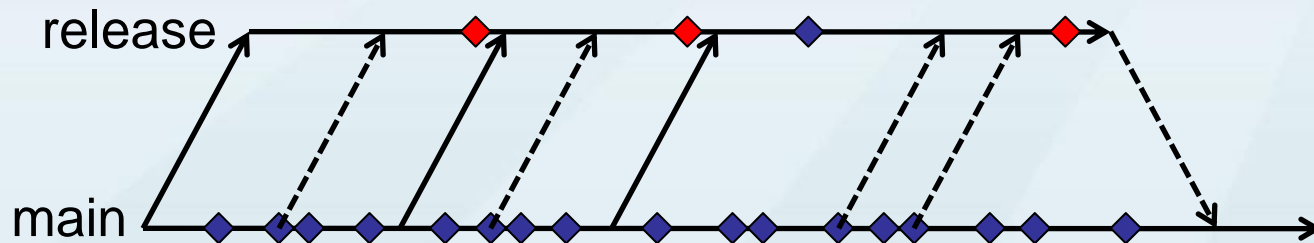
2011

PERFORCE  
USER CONFERENCE



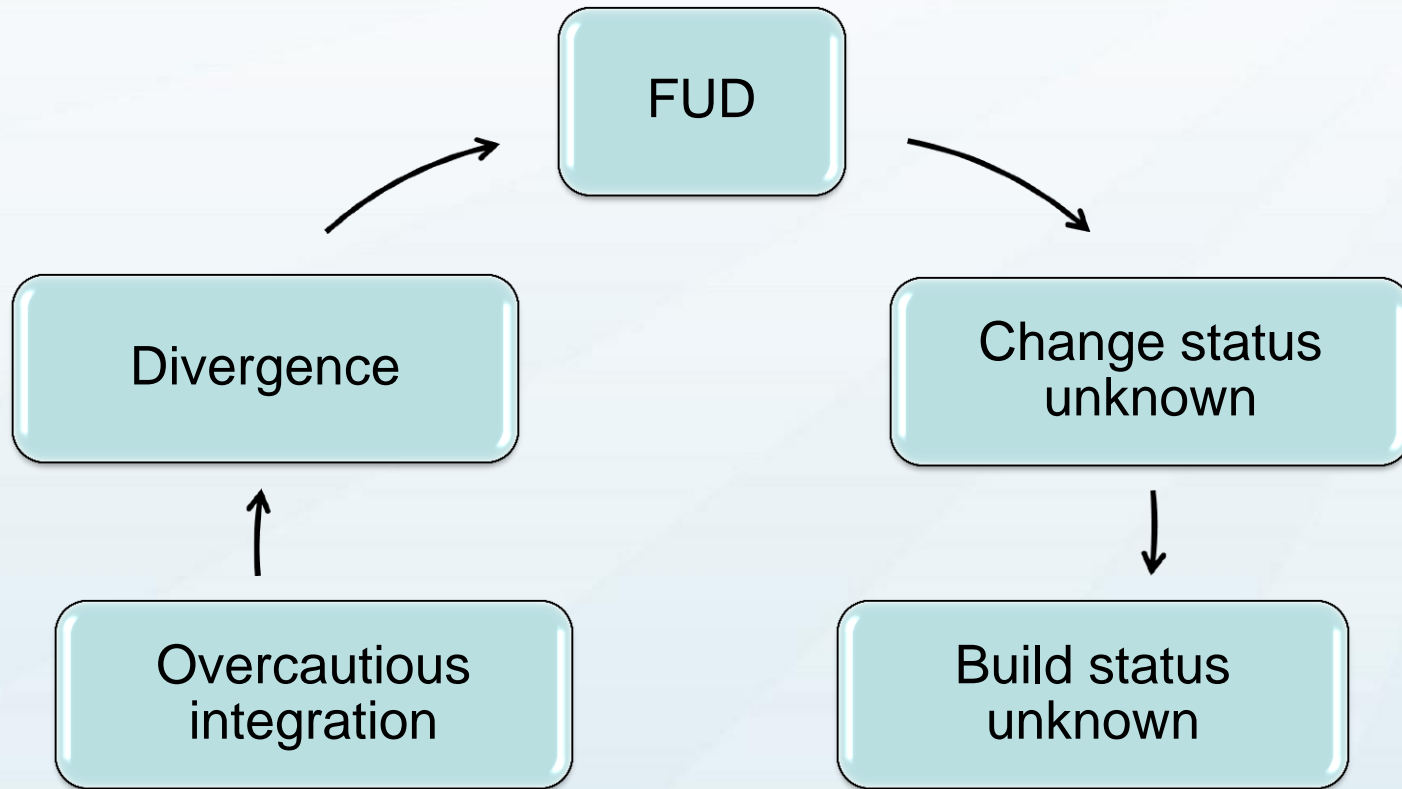
# Improved process

- Work on main, test on release
- Only a few selected fixes integrated to stabilize release
- Intermediate release at end of week
- Full copy up at start of next week
- Final cycle takes 2-3 weeks





# Better, but...



Only sustainable for a couple of weeks

# Release Tools

*Tools for the marathon of a full release cycle*

2011

**PERFORCE**  
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# Tools change everything

- Improve visibility of changes on release branch
- Make it easy to see which change is in which build
- User to request integration to release branch
- Allow classification and review of changes
- Facilitate integration by build team
- All relevant information in one place
- Full dependency information



# Release Manager – User Changes

ReleaseManager +

← → <http://127.0.0.1:81/> ☆ ↻ ABP

**GUERRILLA** User: guest

User Changes
Release Pending Changes
Release Released Changes
Demo Pending Changes
Demo Released Changes

Willem

Change	Time/User	Files/Size	Description	Comments	Release Status/Action	Demo Status/Action
1232320	Mon 13-Dec-2010 15:01 by <b>Willem</b>	7 files(s), +933 bytes	Silent footsteps ability is now a career unlock instead of a ribbon. [Reviewed by Gary]		Not Released <b>Request Release</b>	Not Released <b>Request Release</b>
1231928	Mon 13-Dec-2010 11:32 by <b>Willem</b>	1 files(s), +151 bytes	Fix for bug 21877: crash in brutal melee. Overriding a brutal melee that's already in progress (i.e. receiving two MsgBrutalMelees after each other) could lead to the victim pointer being reset. [Reviewed by Tommy]		Released In build 395	Released
1228632	Wed 08-Dec-2010 16:08 by <b>Willem</b>	1 files(s), +28 bytes	Proper fix for 21618: player 2 was allowed to interrupt player 1's close combat if player 2 already performed an unfinished environmental combo on the same victim because the mBrutalMeleeVictim pointer was never reset. [Reviewed by Tommy]		Released In build 393	Not Released <b>Request Release</b>
1226219	Mon 06-Dec-2010 10:01 by <b>Willem</b>	1 files(s), +94 bytes	Fix for destructibility replication: the enabled parts array was mixing destructible part index and model part index. The net effect was that the last destructibility part enabledness was not replicated (which could crash when constraints were involved). [Reviewed by Kasper]		Pending <b>Undo Request</b>	Not Released <b>Request Release</b>
1224035	Fri 03-Dec-2010 11:58 by <b>Willem</b>	3 files(s), -11 bytes	Fix for bug 21193: Turned off replication for the crashing prop and renamed it. It was sometimes mistaken for the mission objective because it had the same name. That's why replication was turned on. Obviously constraint replication should be fixed too but that is of later concern. [Level changes by Steven de Vries reviewed by Stefan]		Released In build 376	Not Released <b>Request Release</b>
1223105	Thu 02-Dec-2010 16:31 by <b>Willem</b>	3 files(s), +3,71 Kb	I've added a check for string buffers being streamed out while they are still referenced. I do this by simply storing all streamed string buffers in an array and checking this array when a bin is streamed out. It can be enabled by a define and I've turned it on for the moment. [Reviewed by Jorrit and Tommy]		Pending <b>Undo Request</b>	Not Released <b>Request Release</b>
1218876	Tue 30-Nov-2010 12:22 by <b>Willem</b>	4 files(s), +320 bytes	Fix for script bug: Added nil checks to capture trooper capture script. [Reviewed by Kasper and Jorrit]		Released In build 386	Not Released <b>Request Release</b>

# Release Manager – Change Details

Change 1213473 by Willem, submitted on Sat 27-Nov-2010 18:20

Change comment:  
Fix for bug 20574: The EffectComponentResource of the effect the capture trooper places on the player was streamed out. As a workaround I removed the component and replaced it with a fire-and-forget sound, which the SoundSystem should be able to handle if it's streamed out. But the real issue of course is that components don't support streaming. Hopefully there's no other content where components are placed on entities other than the 'resource-owner', but that's something to investigate. [Reviewed by Alex]

Release Status/Action	Demo Status/Action
Released In build 368	Not Released <a href="#">Request Release</a>

Change contains 4 files(s), total size delta = +10 bytes

Action	Size delta	File
edit	+333 bytes	<a href="#">//depot/KZ3/code/KIN/GameLib/Game/Entities/Components/CaptureTrooperComponent.cpp</a>
edit	-8 bytes	<a href="#">//depot/KZ3/code/KIN/GameLib/Game/Entities/Components/CaptureTrooperComponentResource.cpp</a>
edit	-28 bytes	<a href="#">//depot/KZ3/code/KIN/GameLib/Game/Entities/Components/CaptureTrooperComponentResource.h</a>
edit	-287 bytes	<a href="#">//depot/KZ3/KIN/Assets/Game_Assets/Entities/Characters/CaptureTrooperComponent.CoreText</a>

Comments:  
Do not integrate to Demo branch!

[Change Comment](#)

by Willem +350 bytes This e.g. can cause a remote humanoid to fire his gun after repairing an object. [Reviewed by Alex] In build 368 [Request Release](#)

# Release Manager – Pending Changes

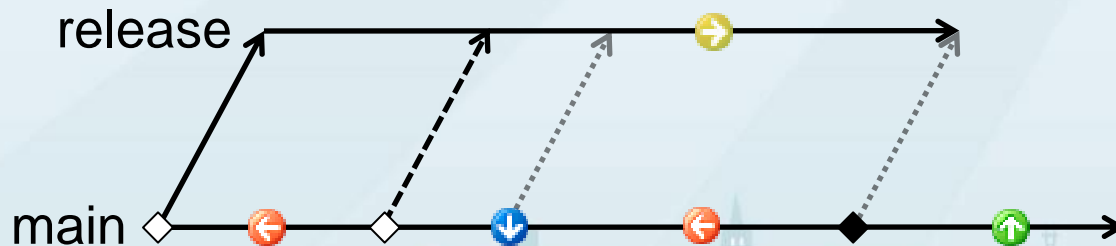
ReleaseManager <http://127.0.0.1:81/> User: frank [Logout](#)

[User Changes](#)
[Release Pending Changes](#)
[Release Released Changes](#)
[Demo Pending Changes](#)
[Demo Released Changes](#)

**Dependency Legend**

- ⬆ Needs to be resolved with a later **Pending** change
- ⬇ Needs resolving with an earlier **Pending** change
- ⬆ Needs to be resolved with a **Manual** change on the Release branch
- ⬆ Needs to be resolved with a change which has not (yet) been **Requested** for release

Change	Time/User	Files/Size	Description	Comments	Dependencies	Status/Action
1226219	Mon 06-Dec-2010 10:01 by Willem	1 files(s), +94 bytes	Fix for destructibility replication: the enabled parts array was mixing destructible part index and model part index. The net effect was that the last destructibility part enabledness was not replicated (which could crash when constraints were involved). [Reviewed by Kasper]		⬇ 1223105 ⬆ 1222345	Pending
1223105	Thu 02-Dec-2010 16:31 by Willem	3 files(s), +3.71 Kb	I've added a check for string buffers being streamed out while they are still referenced. I do this by simply storing all streamed string buffers in an array and checking this array when a bin is streamed out. It can be enabled by a define and I've turned it on for the moment. [Reviewed by Jorrit and Tommy]		⬆ 1226219 ⬆ 1234567	Approved (Med) Not Released Pending Approved (Low) Approved (Med) Approved (High) Denied Not Needed on Branch

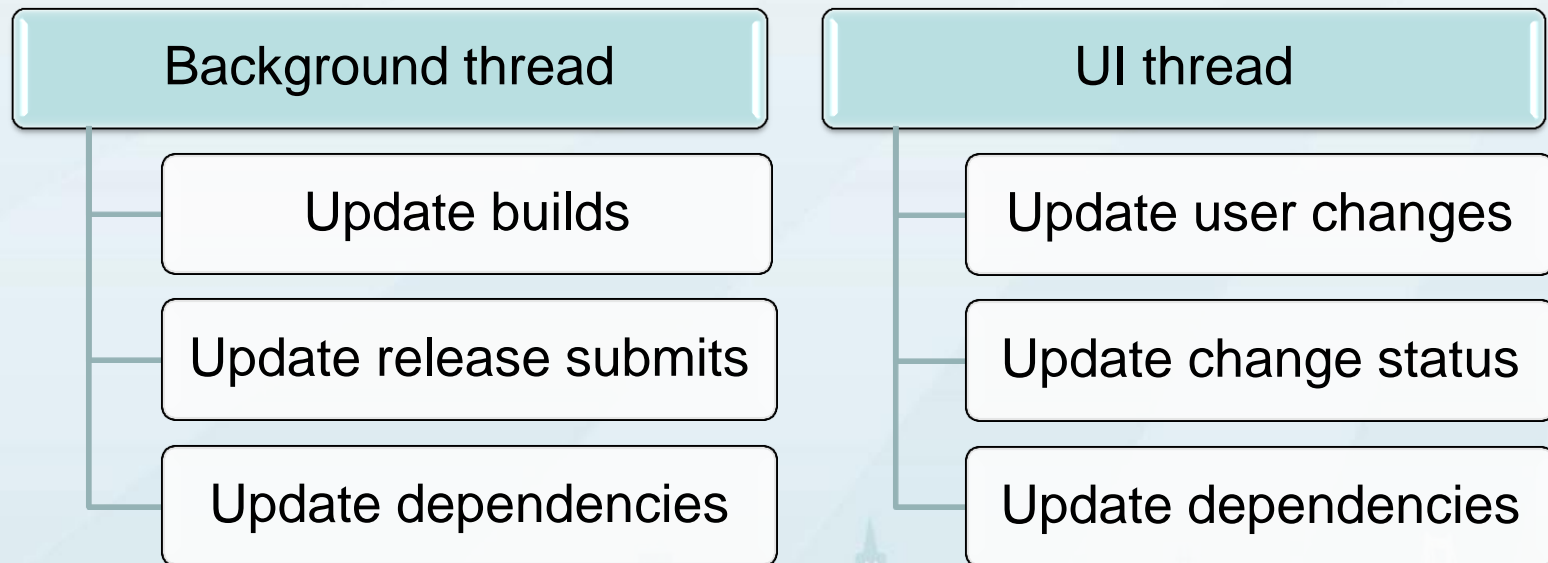


# Release Manager – Released Changes

Change ID	Date	Author	Files	Description	Status
[Reviewed by willem]					
1231733 (1233208)	Mon 13-Dec-2010 09:20	by <b>lambert.wolterbeekmuller</b>	16 files(s), -71 bytes	localizer export (various loc fixes FRENCH HEALTH WARNING subtitles shortened) (INTEGRATE)	Released In build 395
1231995 (1231995)	Mon 13-Dec-2010 12:08	by <b>frank</b>	1 files(s), -6 bytes	map file enabled on Release branch (duh!)	Manual In build 395
1231487 (1231503)	Sat 11-Dec-2010 21:28	by <b>michiel</b>	1 files(s), -633 bytes	Workaround for bug 21318 - Crash - Mobile Factory - Lower floors - Crash while firing boltgun at yellow barrel on walkway above grinders (GER sku/3D)  The script was deleting three LnP's at the moment the walkway collapsed. If an entity went into the LnP at the same frame as the LnP was removed then a message for "StartAttach" was sent to the script but the Sender would be the LnP which was no longer valid causing a crash.  Fixed by not removing the LnP's from script which causes the HGH's to float in mid-air when they're in LnP and you destroy the bridge but it removes the crash	Released In build 395
1230976 (1231502)	Fri 10-Dec-2010 17:07	by <b>gary.longerstaey</b>	2 files(s), +44 bytes	Point change to  1230756. Knock-on problem in leaderboards [Reviewed by Oscar]	Released In build 395
<b>Build 393 started at Fri 10-Dec-2010, 23:28 (from change 1231335)</b> <b>Location: \\guerrilla-games.com\buildshare\buildshare\KZ3-Release.FullGame\393</b>					
1231319 (1231335)	Fri 10-Dec-2010 23:15	by <b>lambert.wolterbeekmuller</b>	17 files(s), -750 bytes	localizer export (INTEGRATE)	Released In build 393
1231239 (1231305)	Fri 10-Dec-2010 19:51	by <b>jeroen.krebbbers</b>	1 files(s), +10 bytes	Fix for the tools build.	Released In build 393
1231231 (1231304)	Fri 10-Dec-2010 19:43	by <b>jeroen.krebbbers</b>	4 files(s), +527 bytes	Fix for glitchy movie playback which occurs when the BD is taken away from us briefly. Fix by simultaneously reading from the prefetch buffer ('fast' startup for movie playback) and from the BD (keep alive/stay with us). Also increased the playerprofile save delay from 4 to 6 secs to avoid congestion on the HD. (Reviewed by Michal and Andreas)	Released In build 393

# Release Manager - Implementation

- 1500 lines of Python, using CherryPy, P4Python and jQueryUI
- Integrates with CruiseControl, DevTrack and P4Web
- First version done in two weeks (followed by lots of tweaking)
- Manages change relations through changelist comments





# Release Tool – Does the real work

The screenshot shows the 'Release Tool' application window. It has a title bar with a green checkmark icon and the text 'Release Tool'. Below the title bar is a 'Release' dropdown menu set to 'Demo' and a 'Refresh' button. The main area contains a table with the following columns: Change #, Date / Time / User, Files / Size, Description, Comment, Dependencies, and Status / Action. The table contains six rows of data, each with a 'Show' button in the 'Files / Size' column and a button in the 'Status / Action' column.

Change #	Date / Time / User	Files / Size	Description	Comment	Dependencies	Status / Action
1226219	Mon 06-Dec-2010 10:01 by <b>Willem</b>	1 file(s), +94 bytes <input type="button" value="Show"/>	Fix for destructibility replication: the enabled parts array was mixing destructible part index and model part index. The net effect was that the last destructibility part enabledness was not replicated (which could crash when constraints were involved). [Reviewed by Kasper]			Pending
1223105	Thu 02-Dec-2010 16:31 by <b>Willem</b>	3 file(s), +3.71 Kb <input type="button" value="Show"/>	I've added a check for string buffers being streamed out while they are still referenced. I do this by simply storing all streamed string buffers in an array, and checking this array when a bin is streamed out. It can be enabled by a define, and I've turned it on for the moment. [Reviewed by Jorrit and Tommy]		1226219 1234567	Approved (Med) [frank 16-05, 02:09] <input type="button" value="Integrate"/>
1211022	Fri 26-Nov-2010 12:49 by <b>stuart</b>	2 file(s), +12.05 Kb <input type="button" value="Show"/>	Added cameras to MP09			Denied [frank 16-05, 12:02]
1199696	Fri 19-Nov-2010 13:48 by <b>stuart</b>	9 file(s), -135.79 Kb <input type="button" value="Show"/>	MP12 update for DLC			Approved (Low) [frank 16-05, 12:02] <input type="button" value="Integrate"/>
1186858 (1348495)	Thu 11-Nov-2010 11:08 by <b>salvador</b>	1 file(s), +4 bytes <input type="button" value="Show"/>	Fix for bugs 16989 and 17705: use autodeath for player so it works when he doesn't go to mortally wounded (i.e. coop die by fire or falling damage) (reviewed by David)			Integrated [frank 16-05, 12:13] <input type="button" value="Submit"/> <input type="button" value="Revert"/>

Description :

Integrate //depot/KZ3/...@1237004 to //depot/KZ3-Release/...

Original message:

Change 1237004 by alex@busby7 On Sun 19-Dec-2010 13:30

Fix for bug 21962. Reset the fade out delay on clean up.

# Conclusion

*Limitations and extensions*



# Limitations and extensions

- Requires in-depth knowledge at the build team
- Large feature development on main cause conflicts
- Constant effort needed to control divergence
  
- Would benefit from proper jobs / bug integration
- Dependency information can be extended
- User groups, search functionality needed
- Performance becomes a concern at > 10.000 changes

# How I learned to stop worrying and embrace the merge-up

Complete and accessible information



Reduced confusion, improved communication



Awareness and confidence boosted



Better decisions made under pressure



Control regained

# Questions?

