



MAKING AN INDEPENDENT MMO THE ALBION ONLINE STORY



DAVID SALZ (DAVID@SANDBOX-INTERACTIVE.COM)
ROBIN HENKYS (ROBIN@SANDBOX-INTERACTIVE.COM)





WHO ARE WE?

- David Salz, CTO and co-founder of Sandbox Interactive
 - 18 years in game development
 - Founder of Indie-Studio „Bitfield“ & BitEngine (only commercial engine for Nintendo DS)
- Robin Henkys, CEO & Game Director
 - 11 years in game development
 - Previously worked on Drakensang Party RPGs and was the lead designer on *Drakensang Online*, a hack & slay MMO

WHO IS SANDBOX INTERACTIVE?

- An independent game developer founded in 2012
- Based in Berlin, Germany
- Employs 30 full time on-site plus another 15–20 part time Freelancers worldwide
- Exists to develop, market and distribute Albion Online



WHAT IS ALBION ONLINE?

- Independent MMORPG
 - privately funded and self-published!
- > 500.000 players
- Open Beta in 2016, Release in 2017, Steam-Release in 2018
- Sandbox, Full-Loot, PvP and Guild-heavy
- One World (like Eve Online)
- Cross-platform (PC/Mac/Linux/Android/iOS)





















Djadir

2030 / 2030

270 / 278

- | | |
|---------------|----------|
| ilya1980 | troitor |
| West13 | Amonis |
| HappyDUK | Voronoff |
| Ruspanda | Kilrog |
| Siberiashaman | Van4ezzz |
| h0rn3t | Chuvihas |
| Trodus | ShayMok |
| thuoi | Ayandi |
| DismoraL | |
| Ferratus | |

[Looking For Group] Masterslayer: LF Tank! for HCE run /w me ip and weapon
[Looking For Group] Sim: tank lfm hce 2+
[Global] Moela: 7 poe ganking Runnel Sink
[Global] Chanok: how can i check my focus balance?
[Looking For Group] Masterslayer: LF Tank! for HCE run /w me ip and weapon
[Looking For Group] PatchythePirate: 1480 Lifecurse / Druid cow! / Royal Jacket - LFG HCE

Chat

FPS: 60

Ping: 107

16.58 ms



40

Albion Choppers's Island

16:29

FOUNDING THE COMPANY

- External investor with game idea
 - Good budget, but way too small for the suggested scope
- Won the pitch!
 - Suggested inexpensive prototype
 - **Modesty and honesty pays off!**
- good: used an existing indie team as a starting point of the team
- already existing network was invaluable!

GETTING STARTED

- core team had never done an online game...
 - (but lots of experience otherwise)
- got external **coaches** with relevant experience!
- picked proven technology / **middleware**
 - (a first for all of us!)
- made some **hard choices** in game design to avoid production risks
 - simple art style (small team, small budget, performance considerations)
 - loading screens instead of “streaming” world







MIDDLEWARE

- Unity3D (starting w/ 3.5 in 2012, trying to always use the latest „stable“)
- Photon (Cross-Platform Networking library and server framework)
- using C# on client and server (with lots of shared code)
- Cassandra – high-performance NoSQL in-memory database
 - offers horizontal scaling!
- Postgres – best (feature-wise) free SQL DB



PostgreSQL



KEEPING CONTROL OF THE TECHNOLOGY

- good: used only minimal feature set of engine, network middleware
- kept Unity completely out of server! (way too slow, way to unreliable!)
- fully functional "command line" client that works without Unity (also allows bots, easy load tests etc.)
- wrote key components ourselves:
 - level loading, collision, pathfinding, AI, complete server structure etc.
- using Unity for Graphics, Animation, Visual Effects, UI, Input handling
- **good compromise between using an engine and roll-our-own!**



Stefan (267)

1000 / 1000

100 / 100

[Open Auction](#)
[Open Build Bu](#)

(267) Stefan



Welcome to Albion Online!
Entering cluster Cluster_Test_DAVID

You can type here



Stefan
[Gild 267]
[Details](#)

Head



Armor

Main

Belt

Cape

Off

Bag

Shoes

Weight: -12




3



4



Type1 (340)

Welcome to Albion Online!
Entering cluster Cluster_Test_DAVID

You can type here

Type1
[Gild 340]

Health: 98 / 100
Health Reg: 0
Energy: 100 / 100
Energy Reg: 0

Speed: 0
Load: 0

Melee Dmg: 2
Melee Speed: 2

Ranged Dmg: 0
Ranged Speed: 0

Magic Dmg: 0
Cast Speed: 0

Melee Armor: 3
Ranged Armor: 3
Magic Armor: 11

Support Power: 0

CC Efficiency: 0
CC Resistance: 0

ALBION
ONLINE

Type1
[Gild 340]
Details

I



I



I



Armor

BeltCape

Bag

II



Weight: -720

I



10

I



10

I



5

II



2

I



10

I



10

I



1

I



1

EmptyEmptyEmptyEmpty



Stefan (267)
1000 / 1000
100 / 100

[Open Auction](#)
[Open Build Building](#)

Silver: 1000
Gold: 0
[Get more Gold!](#)

[Buy](#)[Sell](#)[Complete](#)[X](#)

Buy Dialog

All

SortBy Name

All

SortBy Stacks

All

SortBy Price

 <div>3</div> <div>T3 Bag</div>	356 Silber	Buy
 <div>16</div> <div>Arcane Shoes</div>	118 Silber	Buy
 <div>4</div> <div>Heavy Recurve Bow</div>	293 Silber	Buy
 <div>3</div> <div>Iron Ore</div>	111 Silber	Buy
 <div>2</div> <div>T4 Axe</div>	89 Silber	Buy

Create Buy Order

Welcome to Albion Online!
Entering cluster: Cluster Test DAVID

You can type here

[Disconnect](#)
Ping: 252 (Sim)



PROTOTYPE & REFINANCE

- Initial Prototype proved ability of the team
- Led to additional investment & continued dev into “Alpha”
- This was a change to the original plan



COMMUNITY BUILDING

- involved large guilds in the development process at a very early stage
- tested early builds with closed user groups in 2–4 week "alpha" test sessions
- offered special rewards such as custom guild logos etc.
- invaluable feedback
- became the seed of our community with long reaching loyalty





KEEPING DESIGN ON TRACK

- Took radical design decisions based on the idea that these would have emotional resonance
- Set these design decisions as immovable pillars and stuck with them:
 - All items player crafted
 - Full Loot PvP
 - You are what you wear (no classes)
 - No item teleportation
- This worked: with a radical promises we got a lot of attention and by delivering on them in Alpha we built our early access program

SCALING WITH SUCCESS

- Original production value and scope were based on budget
- Early Access success lead to an increase in scope and production value
- This lead to further growth
- In the end achieved 3–4x the original budget production value through early access until launch

„WILD“ GROWTH

- Wrote a novel with british author Peter Newman
 - Novel flopped, but the story development was very valueable to guide content production
- Orchestral Soundtrack
- We also run our own regular AlbionTV stream which follows the developing player





MARKETING & PUBLISHING YOUR OWN MMO

- Marketing
 - Youtube, Twitch, High quality preview videos
- Distribution
 - Outsourced web development – expensive & made integration harder



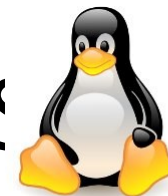
RELEASE



TECH FAILS #1

- at one point, we had all buildings disappear in a closed alpha...
- ... which turned out to be a Cassandra bug (secondary index "lost")
- "bleeding edge" open source technology is dangerous.
- Even release builds can have catastrophic bugs ☹️
- **Do long-term testing before phasing a new middleware build into production!**
- **Consider using "older" builds where the bugs are already known!**

TECH FAILS #2 (A POST-LAUNCH DISASTER) vs.



- After 12–18 hours under full load, Cassandra suddenly became unresponsive for 5–8 minutes, killing the game
- Unable to fix this for > 2 weeks ☹️☹️☹️
- solution: **get a consultant** – move from Windows to Linux (like everyone else)
- problem was disc IO bottleneck between Cassandra and Windows RAID controller driver
- **Try to use technology the same way everyone else is using it!**

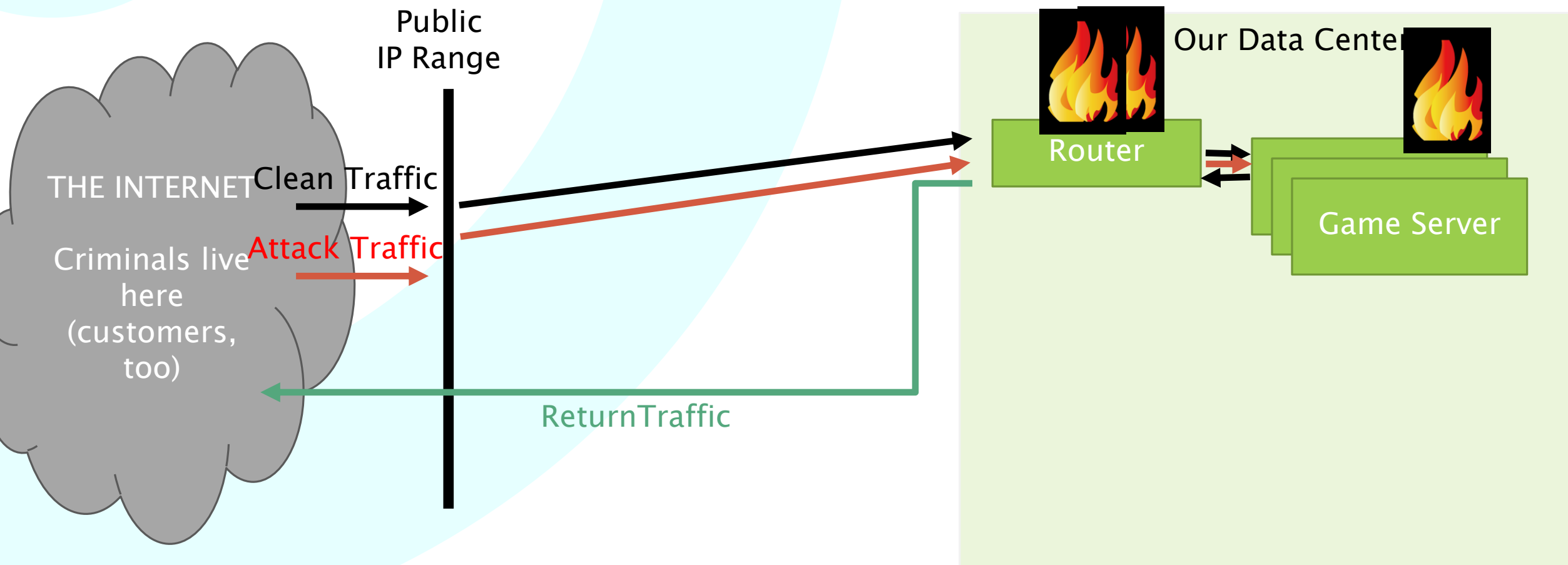
DDOS ATTACKS

- Researched DDos protection ahead of launch
 - Very expensive
 - Technologically complicated (requires own AS, own IP range, BGP routers...)
 - takes months to implement
- ... so let's not do this

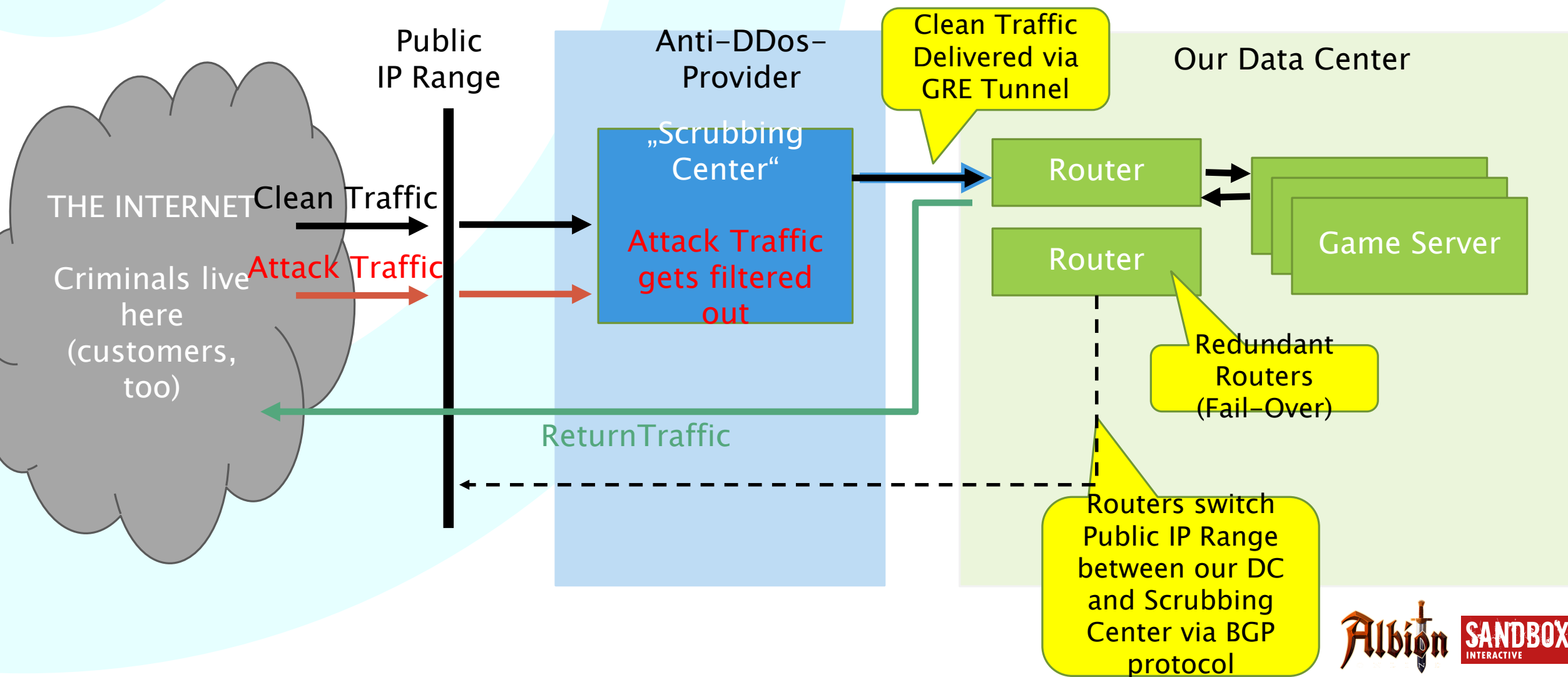
DDOS ATTACKS

- Got blackmailed and attacked
- > 4 weeks, > 60 Gbps attacks
- Sleepless nights, upset community
- burned through first mitigation provider (cheap is sometimes too cheap)
- Then got (expensive) external help
- Should have done this earlier!

INTERMISSION: DDOS MITIGATION



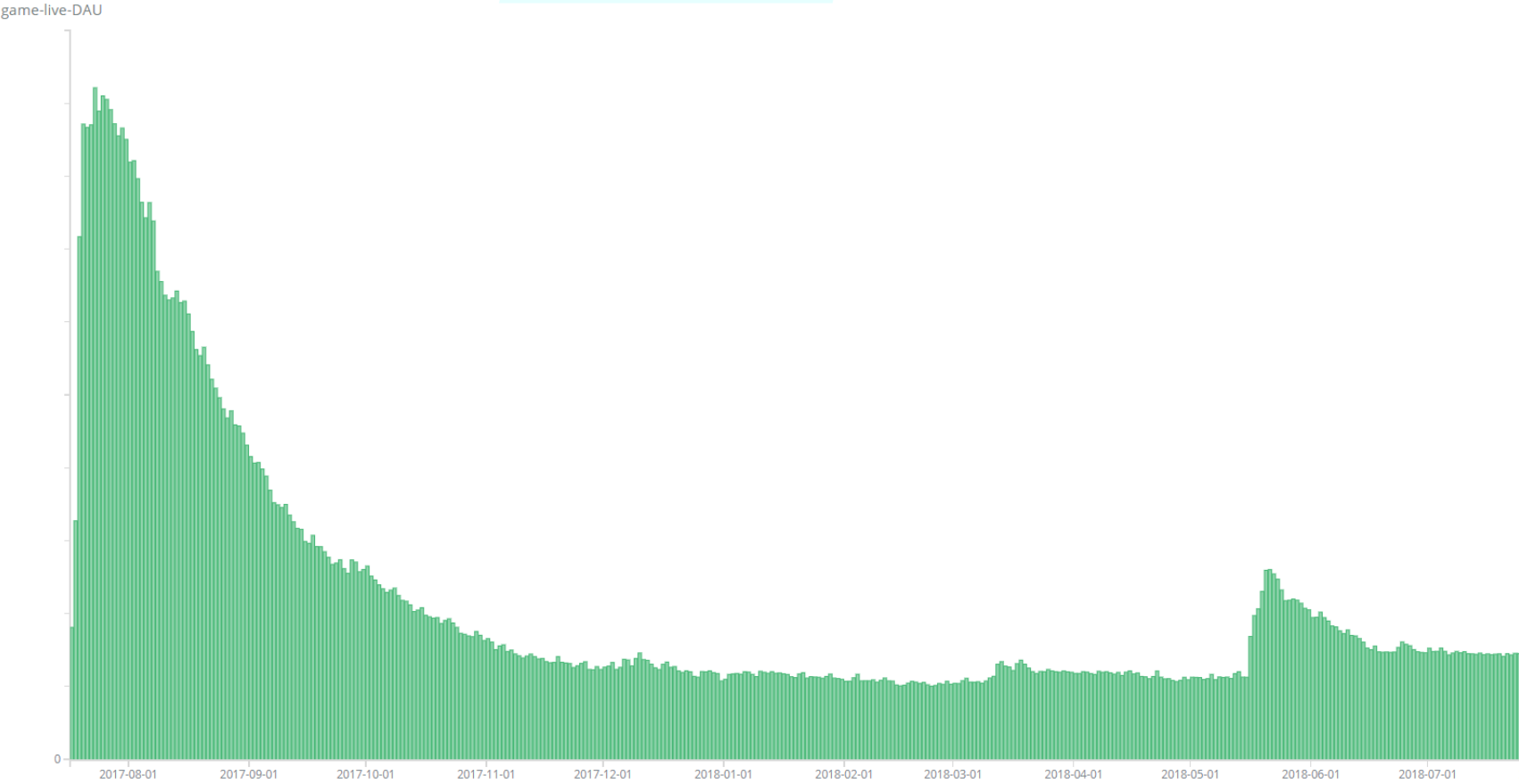
INTERMISSION: DDOS MITIGATION





BUSINESS LESSONS

- When we launched and sold hundreds of thousands of games, we were a company of almost 60 employees
- 6 months later we had to make the decision to scale the team to the actual player base
- Learning: When scaling up a niche game, remember you're still in a niche
- Just because a lot of people project their dreams into your MMO doesn't mean they will play it– those people you designed the game for will play it.



THE ,BETA' FACTOR

- All throughout development we were discussing how big the impact of the game being in beta would be on player retention
- The argument was that players would not grind during a beta if they knew progress would be wiped
- Learning: Live player curve behaved very similar to Beta player curve

DESIGN LESSONS

- Surprisingly successful with our unemotional design approach following game theory and market logic
- Free Market & Game Theory works... until it gets emotional.
- Personal design lesson: „WoWification“ isn't everything.

CONCLUSIONS

- Niche MMOs can work!
- Early access can help you to build a much better product than you can originally afford
- Don't get carried away by your own success
- Middleware and clever use of tech is good, but don't ever cut DDOS protection on an MMO



THANK YOU!

Questions?

David Salz (david@sandbox-interactive.com)

Robin Henkys (robin@sandbox-interactive.com)