

# How Wargaming.net use LXC for staging environments

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# LXC

## Wikipedia

LXC (Linux Containers) is an operating system-level virtualization method for running multiple isolated Linux systems (containers) on a single control host. LXC does not provide a virtual machine, but rather provides a virtual environment that has its own process and network space.

LXC relies on the Linux kernel cgroups functionality that became available in version 2.6.29, developed as part of LXC. It also relies on other kinds of namespace-isolation functionality, which were developed and integrated into the mainline Linux kernel.

# Features

- Lightweight - chroot on steroids
- Mainline kernel - available everywhere
- Can coexist with other virtualization technologies
- Effective - only one kernel schedule resources

# Problems

## Games

- World of Tanks
- World of Warplanes

## Multipling problems

- About 10 instances for testers
- Separate env for every server developer
- Fast and easy deployment required
- Deployment not automated

# Solution

## Copy prepared container

- Ubuntu Server 11.10 as host
- Centos 5.7 as guest
- All configs are ip and hostname agnostic
- Pass mac-address and hostname from lxc config
- Use office DNS/DHCP infrastructure
- Bind rabbitmq's mnesia storage to localhost, not hostname
- 2 network interfaces - external and internal

# Problems

## Projects

- SPA - single point of authentication
- Portal - game portal
- Exporter - export data form server
- CSIS - cluster state information service
- Update Service - news and patches info for launcher
- ...

## Multipling problems

- Multiple games
- Multiple regions
- Stable/Trunk/Experimental

# Solution

- Ubuntu Server 11.10 as host
- CentOS 5.7 -> Ubuntu Server 11.10 as guest
- Copy base CentOS container (OpenVZ's)
- Separate lxc container per project instance
- Use lxc template for installing Ubuntu
- Use puppet for automatic preparing system
- Use fabric for automatic deploying app
- Separate management user "with crontab"

# Future Goals

- Improve dencity of containers per hardware
- Prepare "all in"virtualbox image



# Questions and Answers

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