

IV Могилевский Фестиваль Науки

DevOps Engineering

:iTechArt



iTechArt

Алексей Бурим

Remarkable
people

- 9+ лет опыта в различных сферах IT.
- Сети передачи данных. От "голого железа до готовых решений"
- Разработка электроники в сфере промышленной автоматизации
- Опыт разработки ПО
- Кластеры. Системы контейнеризации
- DevOps

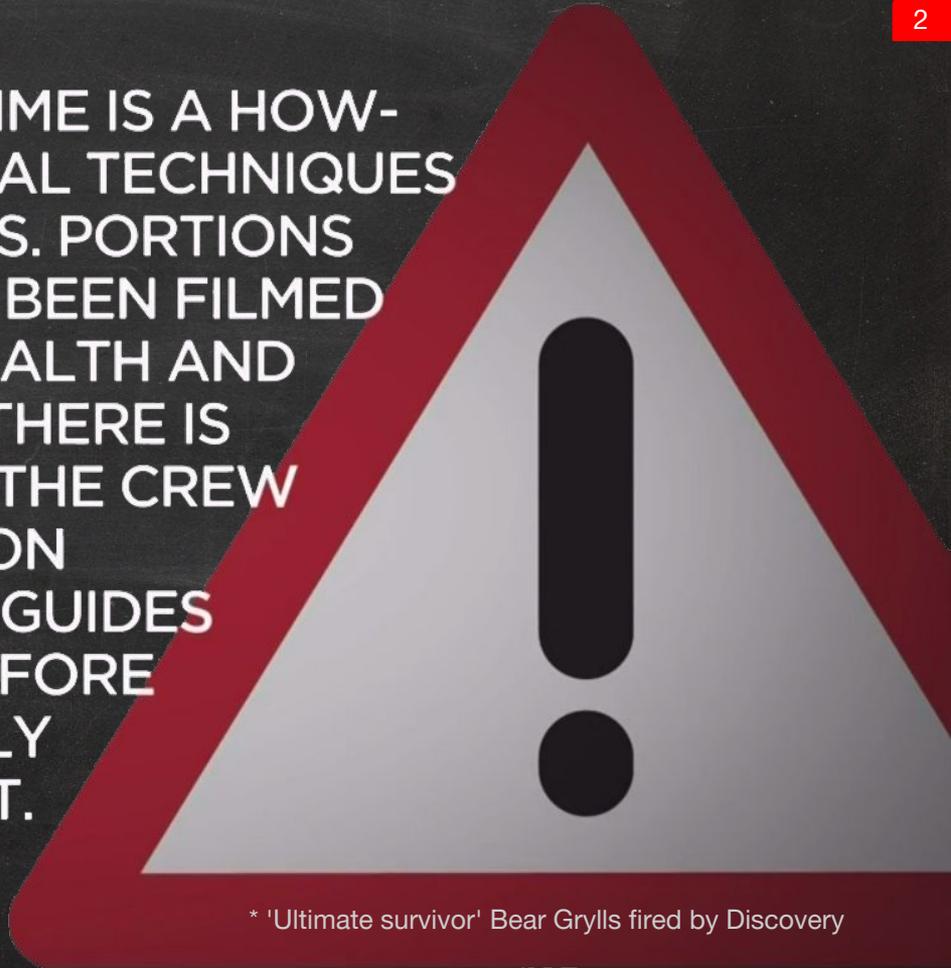


alex.burym
@itechart-group.com



 <https://www.linkedin.com/in/alex-burym>

THE FOLLOWING PROGRAMME IS A HOW-TO GUIDE TO BASIC SURVIVAL TECHNIQUES IN EXTREME ENVIRONMENTS. PORTIONS OF THE PROGRAMME HAVE BEEN FILMED OUT OF SEQUENCE. FOR HEALTH AND SAFETY CONSIDERATIONS THERE IS SOME DIRECT SUPPORT TO THE CREW AND HOST WHILE FILMING ON LOCATION. PROFESSIONAL GUIDES SHOULD BE CONSULTED BEFORE ENTERING ANY POTENTIALLY DANGEROUS ENVIRONMENT.



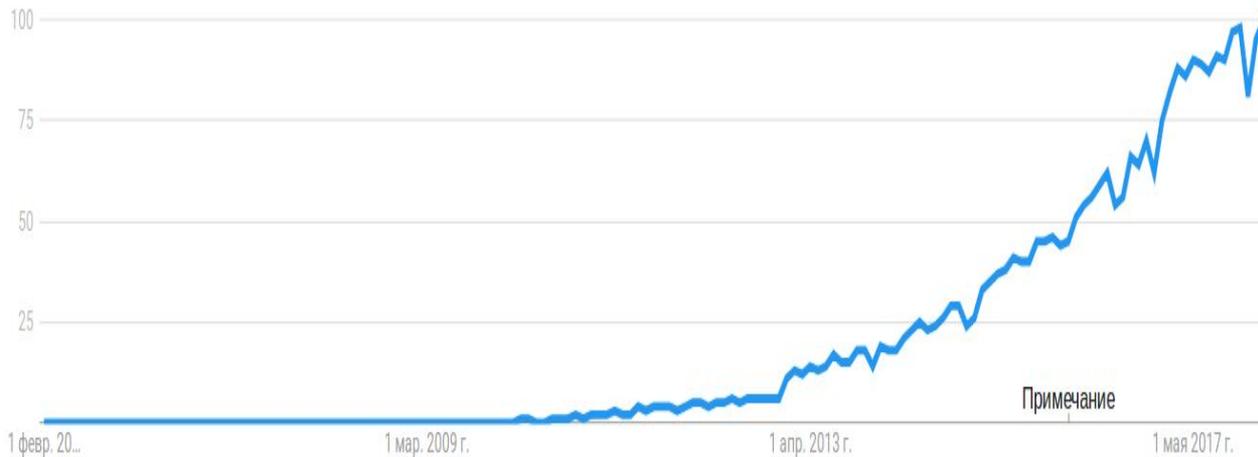
* 'Ultimate survivor' Bear Grylls fired by Discovery



Динамика популярности

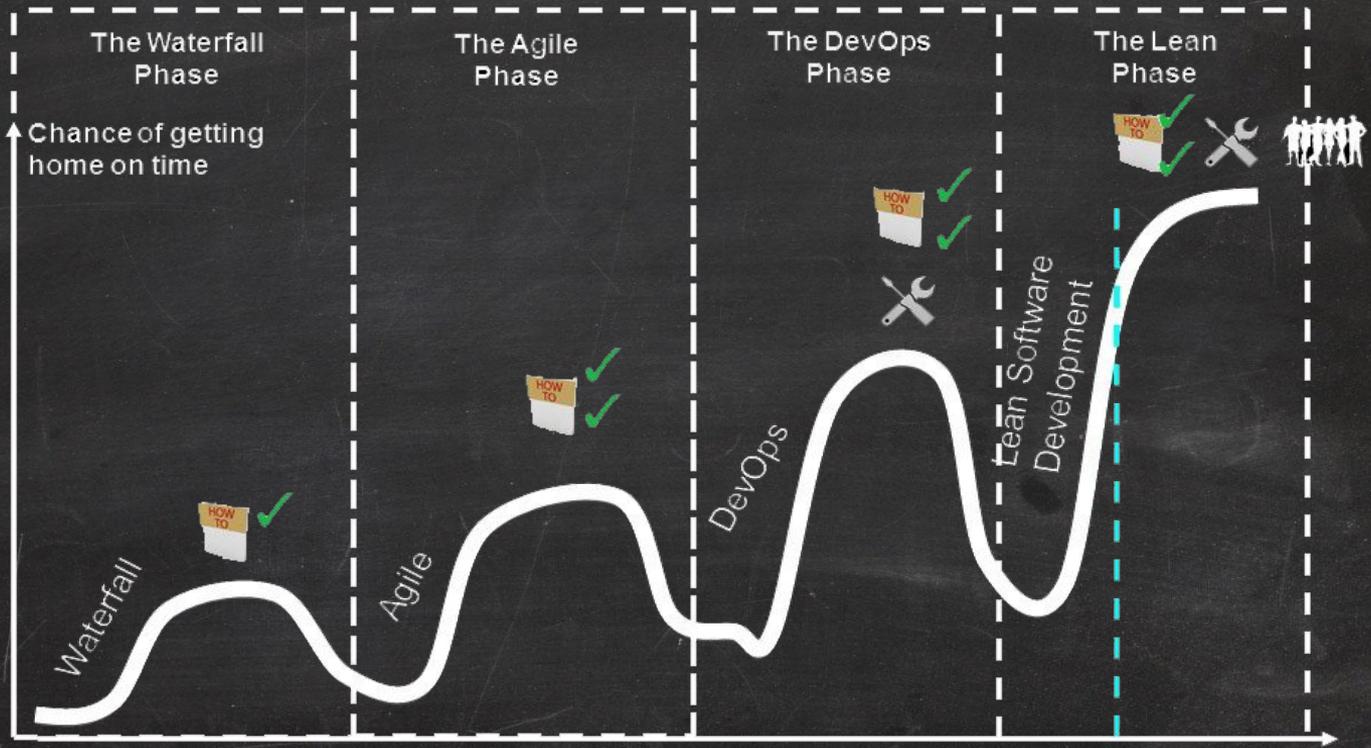
Google Trends

● DevOps



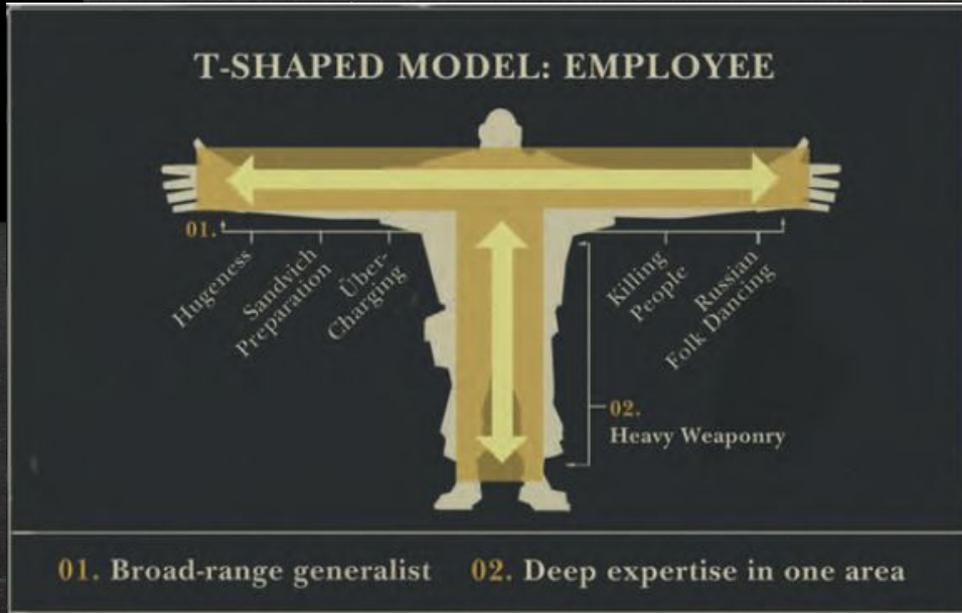
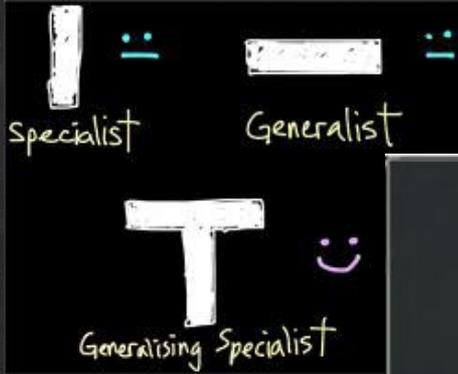
Примечание





Waterfall	Agile	DevOps Practices	DevOps Culture
Methods & Process		DevOps Tools	People
Defined Process		Enforced Process	Guided by Principle





ABCDE...Z-shaped ...





Проблема
не на нашей
стороне!



А у меня на
машине
всё работает!



WANTED:

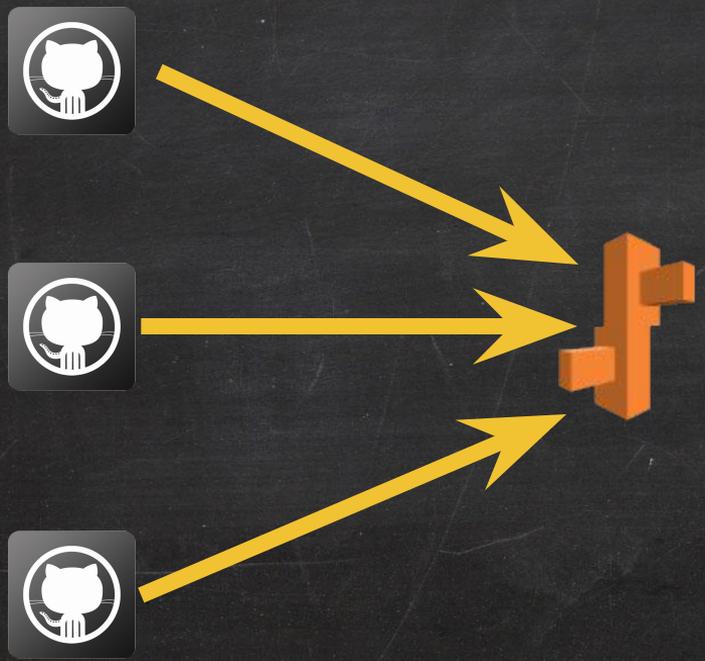
Senior DevOps Engineer

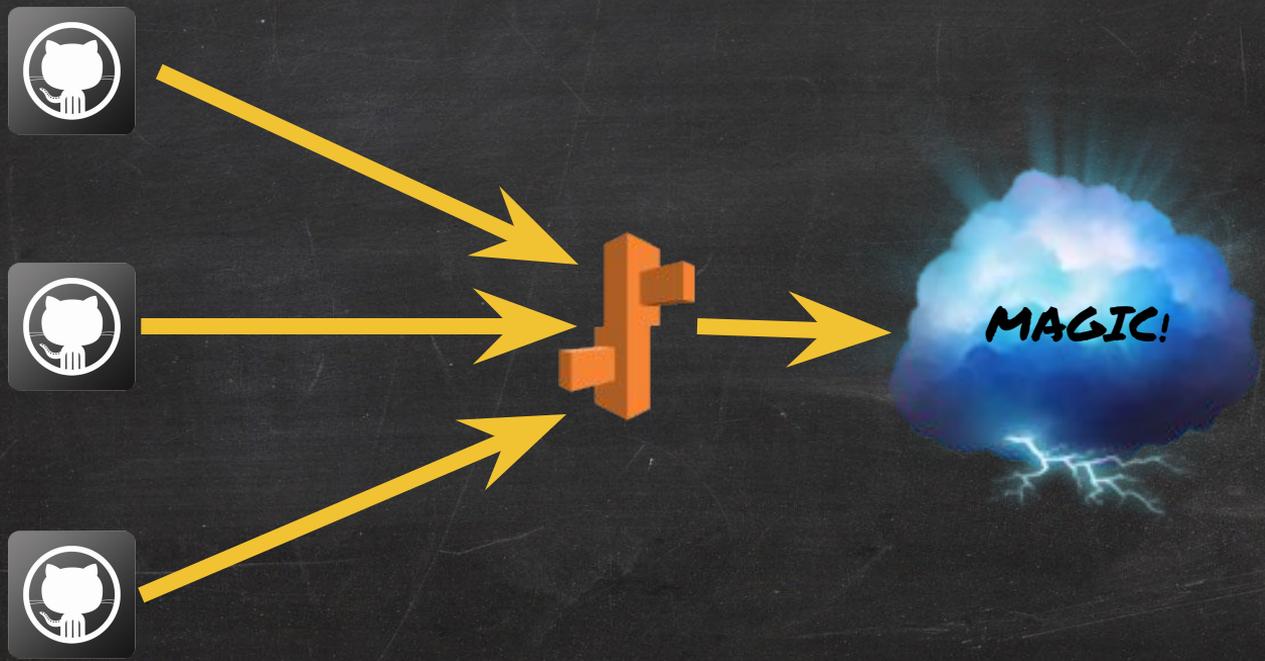


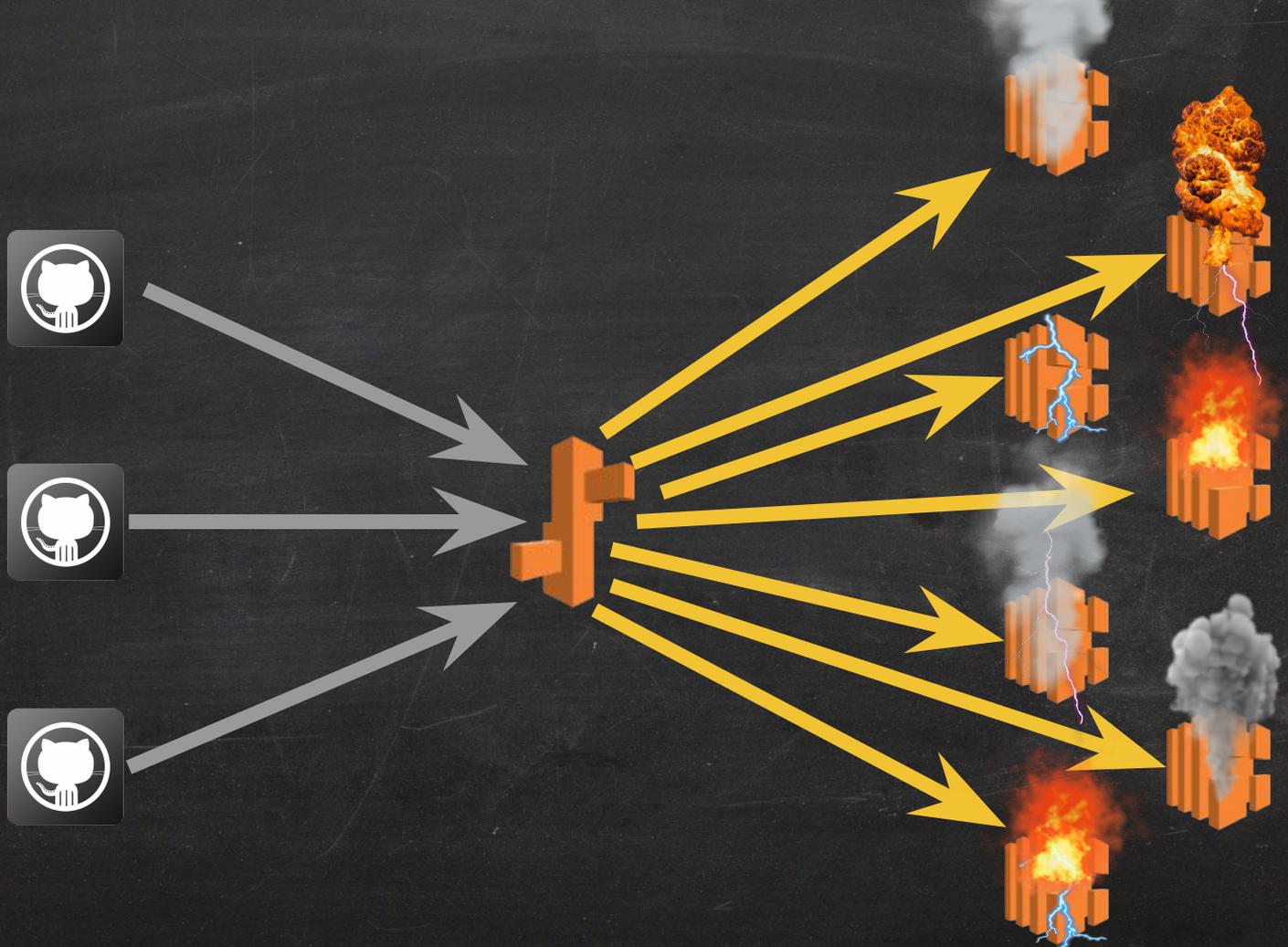


THERE'S NO SILVER BULLET

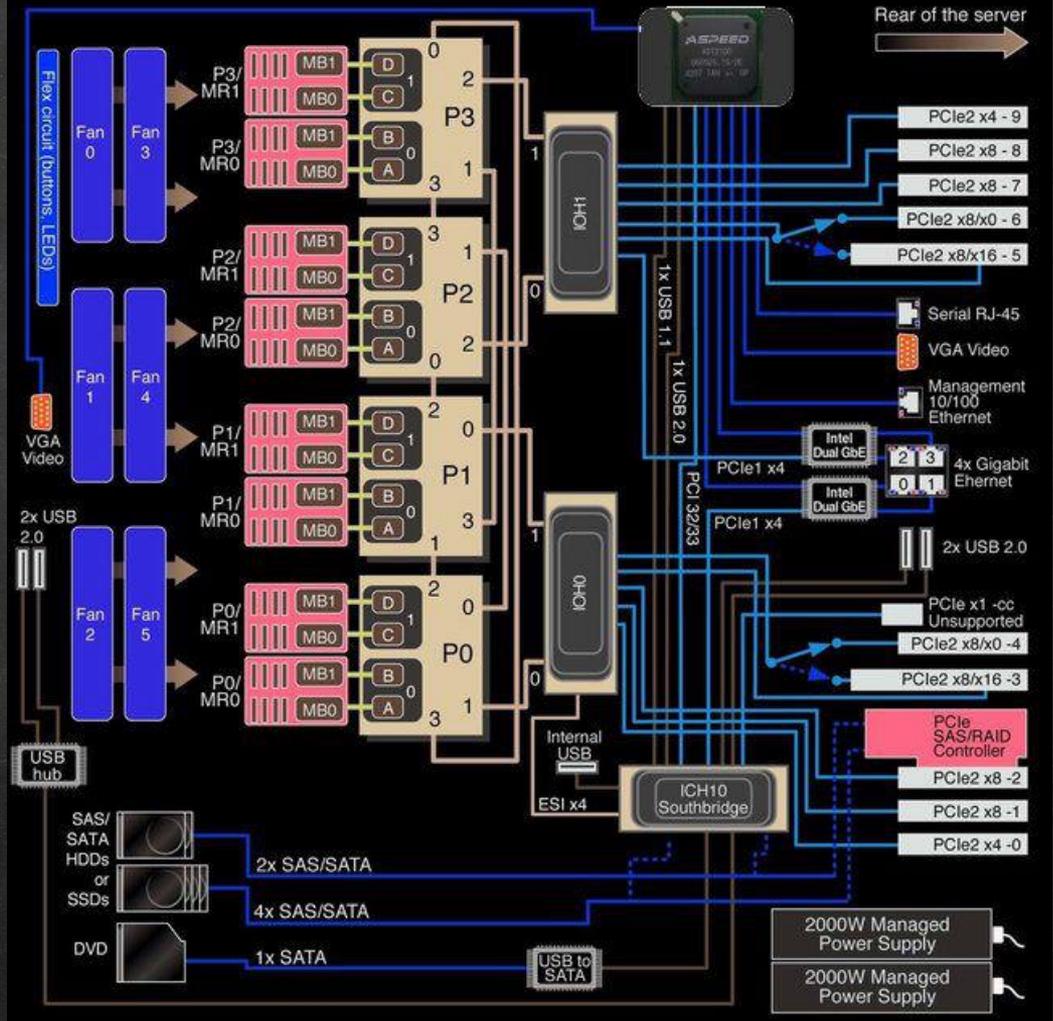


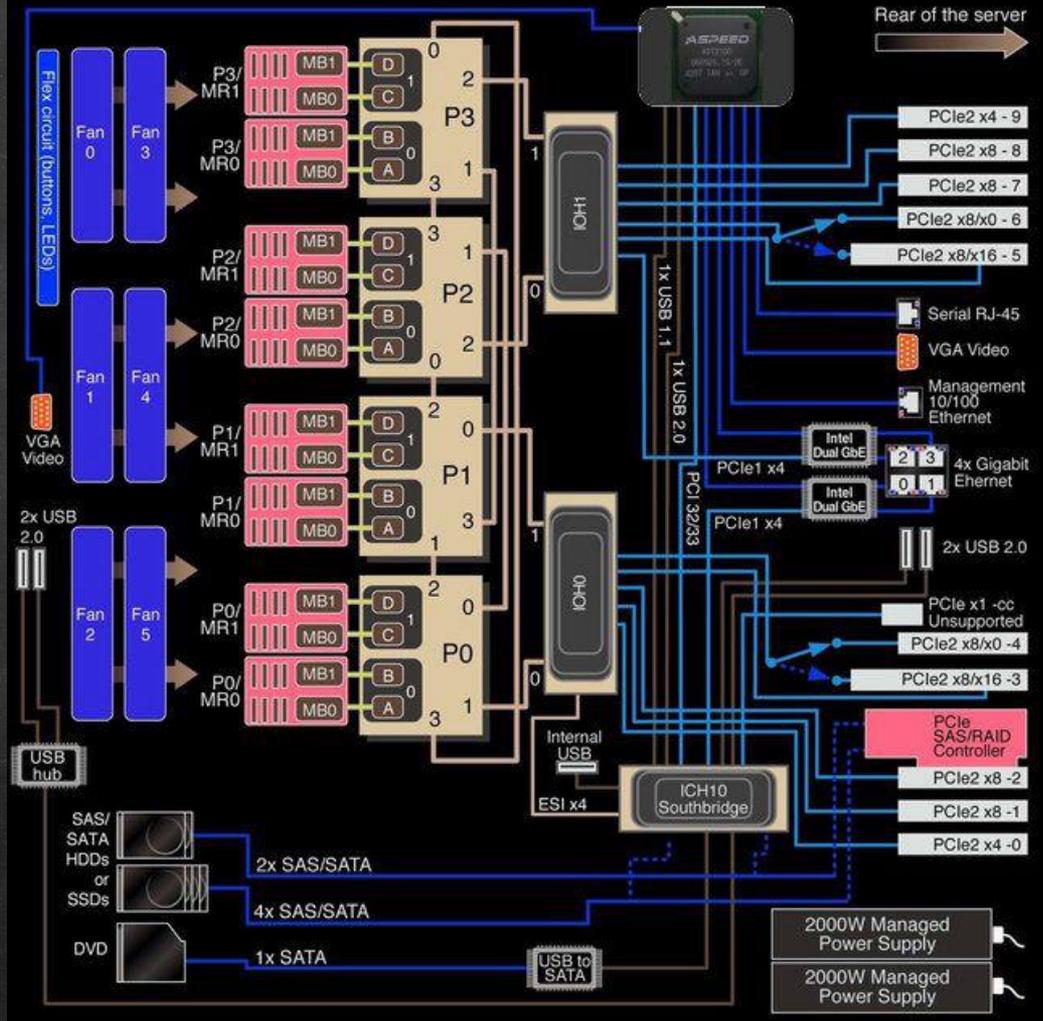














T2.large ~70\$



T2.large ~70\$



T2.large ~250\$



T2.large ~70\$



T2.large ~70\$



M4.large ~490\$



T2.large ~70\$



T2.large ~70\$





2 x T2.micro ~18\$

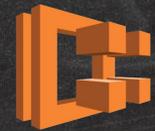
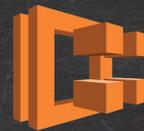
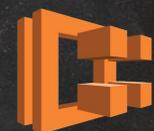
2 x T2.micro ~18\$

2 x T2.nano ~8,6\$

T2.nano ~4,3\$

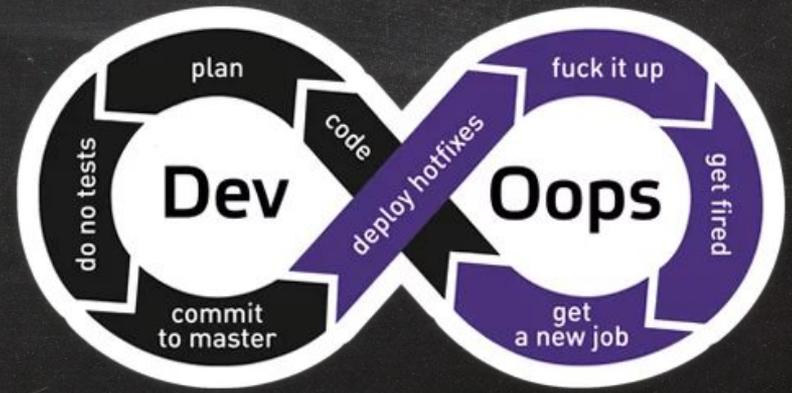
T2.nano ~4,3\$

T2.medium ~34\$



1160\$ VS 87,2\$

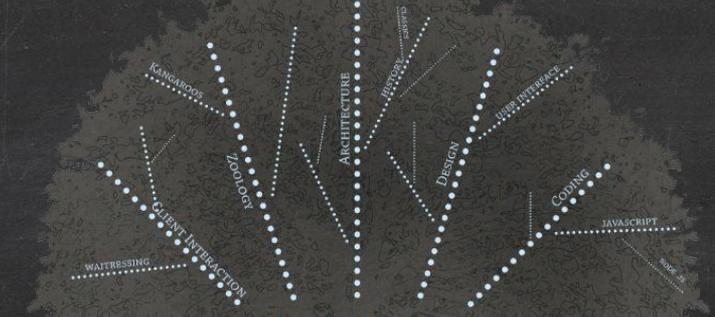






TREE-SHAPED

EXPANSIVE SKILLS AND EFFECTIVENESS



CORE EXPERIENCE



MATHEMATICS ETHICS



BROAD DEPTH OF KNOWLEDGE







Build

SCM & VCS



Test

Browser



Load / Performance



Continuous Integration



Build



Configuration



Security



Repositories



Code





Build

SCM & VCS



Test

Browser



Load / Performance



Continuous Integration



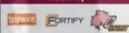
Build



Configuration



Security



Repositories



Code



Manage

Events & Alerts



Service Desk



Project Management



CRM Helpdesk



Notify

Escalate



Collaboration



Build

SCM & VCS

- git, Bitbucket, GitLab, GitHub, mercurial

Browser

- Protractor, Cypress, Karma, Selenium, WebDriver, SauceLabs

Load / Performance

- JMeter, SOASTA, BlazeMeter, Locust, Gatling, LoadImpact

Continuous Integration

- CircleCI, Jenkins, Bamboo, Travis CI, CodeShip, TeamCity

Build

- sbt, Gradle, Maven, Ant, Packer, MSBuild

Repositories

- ArtifactFactory, Nexus, npm, Docker Hub, Artifactory

Test

Configuration Management

- puppet, CHEF, SALTSTACK, Ansible, PowerShell, CFEngine

Containers

- docker, rkt

Orchestration

- Rancher, AWS, Kubernetes, Nomad

Compute

- Microsoft Azure, AWS, Oracle Cloud

Continuous Delivery

- urban (code), Xebial Labs, harness, Automic, Spinnaker, Digo, Octopus Deploy, Electric Cloud

Infrastructure Provisioning

- Terraform, HashiCorp

Serverless

- Azure Functions, AWS Lambda

Run-Time

- Java, Python, Ruby, Node, .NET

OS

- Ubuntu, CentOS, Red Hat

DB

- MySQL, MongoDB, PostgreSQL, Oracle

CDN

- Akamai, Fastly, Cloudflare, Akamai

Deploy

Configuration Management

- puppet, CHEF, SALTSTACK, Ansible, PowerShell, CFEngine

Containers

- docker, rkt

Orchestration

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- MySQL, MongoDB, PostgreSQL, Oracle

CDN

- Akamai, Fastly, Cloudflare, Akamai

Manage

Events & Alerts

- Moogsoft, signifai, servicenow, bigpanda

Service Desk

- servicenow, bmc, JIRA

Project Management

- asana, JIRA, Trello

CRM Helpdesk

- zendesk, freshdesk

Notify

Escalate

- pagerduty, matters, severbridge, VictorOps, OpsGenie

Collaboration

- slack, HipChat, Microsoft Teams, box, twilio

Build

SCM & VCS

- git, Bitbucket, GitHub, GitLab, mercurial

Continuous Integration

- circleci, Jenkins, Bamboo, Travis CI, CODESHIP, TeamCity

Build

- sbt, Gradle, Maven, Packer, MSBuild

Repositories

- pkg Artifactory, Nexus, npm, Docker Hub

Test

Browser

- Protractor, Cypress, Karma, Selenium, WebDriverIO, Nightwatch.js

Load / Performance

- JMeter, SOASTA, BlazeMeter, LOCUST, Gatling, LOADIMPACT

Configuration

- SERVERSPEC

Security

- OpenSCAP, CERTIFY

Code

- JUnit, OUnit, Spock, cucumber, Jasmine, xUnit.net, pytest, CUnit

Deploy

Configuration Management

- puppet, CHEF, SALTSTACK, Ansible, PowerShell, CFEngine

Continuous Delivery

- urban (code), Xebialabs, harness, Automic, Spinnaker, Digo, Octopus Deploy, Electric Cloud

Infrastructure Provisioning

- Terraform, OpenStack

Security

- OpenSCAP, Vault

Run

Containers

- docker, rkt

Orchestration

- RANCHER, AWS, Kubernetes, Nomad

Compute

- Microsoft Azure, AWS, Oracle Cloud

Serverless

- Azure Functions, AWS Lambda

Run-Time

- Java, Python, Node, .NET

OS

- Ubuntu, CentOS, Red Hat

DB

- MySQL, MongoDB, Microsoft SQL Server, Oracle Database

CDN

- Akamai, Cloudflare, Fastly, Amazon CloudFront

Monitor

Time-Series Metrics

- Synthetic / Availability**: pingdom, catchpoint, gtm360, Apica, Keynote
- Tracing**: LIGHTSTEP, ELASTIC APM, New Relic
- Big Data**: unraid, Aerospike
- Application (APM)**: AWS X-Ray, INSTANA, dynatrace, New Relic, APPDYNAMICS
- Cloud Infrastructure**: STANDBY, DATADOG, ELASTIC, WAVEFRONT, signal fx, Grafana, honeycomb, Prometheus, Graficube, CloudWatch
- Traditional Infrastructure**: Nagios, zenoss
- Network**: ThousandEyes, SolarWinds, SolarWinds

Unstructured Data

- Errors**: SENTRY, Rollbar, Stackify, Airbrake.io, OverOps, RAYGUN
- Logs Mgmt**: splunk, sumologic, LOGGLY, logz.io, elastic, logstash, kibana

Manage

Events & Alerts

- Moogsoft, signifi, servicenow, bigpanda

Service Desk

- servicenow, bmc, JIRA

Project Management

- asana, JIRA, Trello, PivotalTracker

CRM Helpdesk

- zendesk, freshdesk

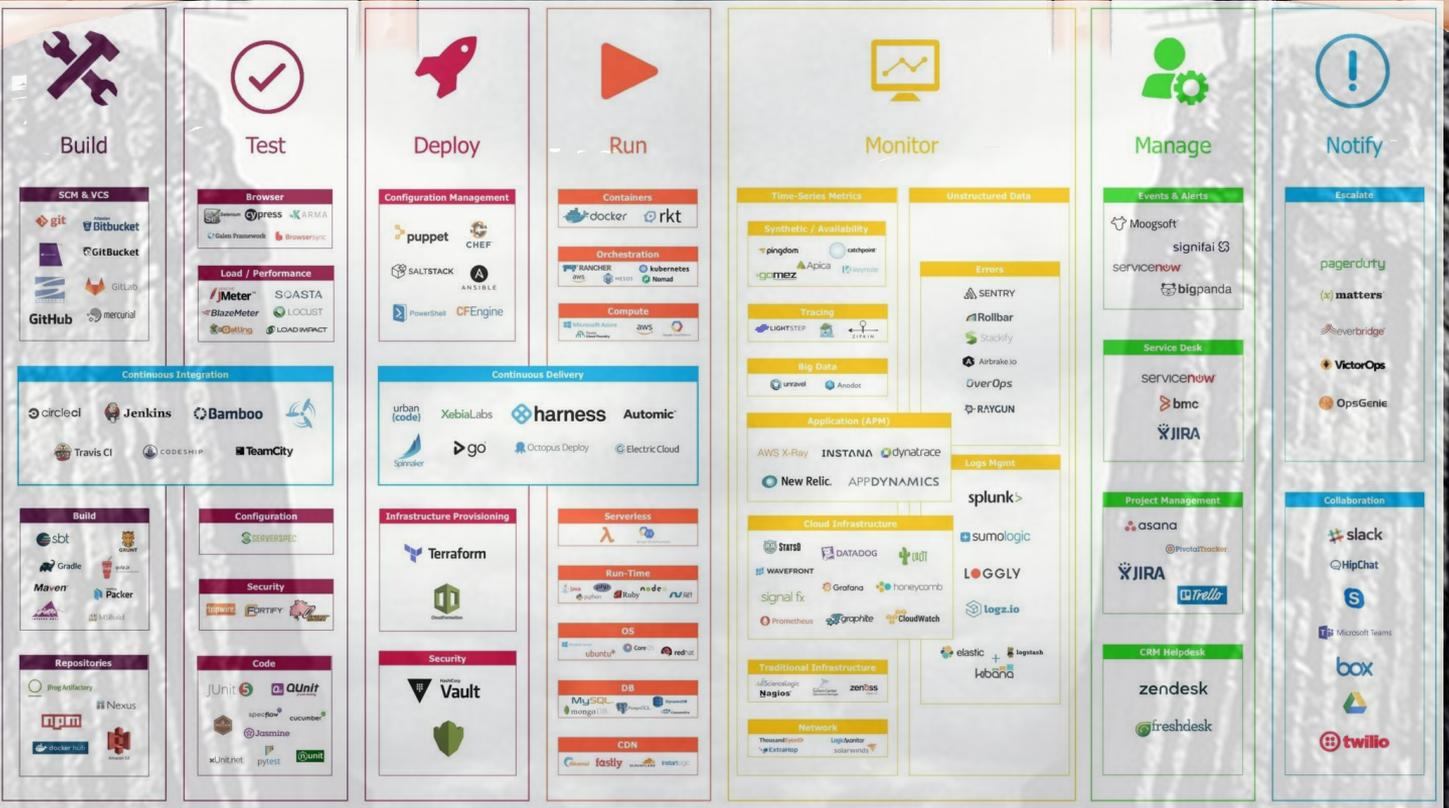
Notify

Escalate

- pagerduty, matters, serverbridge, VictorOps, OpsGenie

Collaboration

- slack, HipChat, Microsoft Teams, box, twilio



Build

SCM & VCS

- git, Bitbucket, GitHub, GitLab, mercurial

Continuous Integration

- circleci, Jenkins, Bamboo, Travis CI, CODESHIP, TeamCity

Build

- sbt, Gradle, Maven, Packer, Ansible, Docker

Repositories

- pkg:factory, Nexus, npm, Docker Hub, Artifactory



Test

Browser

- Selenium, Cypress, Karma, WebDriver, Sauce Labs, BrowserStack

Load / Performance

- JMeter, SOASTA, BlazeMeter, Locust, Gatling, LoadImpact

Configuration

- SERVERSPEC

Security

- OpenSCAP, CERTIFY

Code

- JUnit, OUnit, Mockito, cucumber, Jasmine, xUnit.net, pytest, CUnit



Deploy

Configuration Management

- puppet, CHEF, SALTSTACK, Ansible, PowerShell, CFEngine

Continuous Delivery

- urban (code), Xebial Labs, harness, Automic, Spinnaker, Digo, Octopus Deploy, Electric Cloud

Infrastructure Provisioning

- Terraform, CloudFormation

Security

- HashiCorp Vault



Run

Containers

- docker, rkt

Orchestration

- RANCHER, AWS, Kubernetes, Nomad

Compute

- Azure, AWS, Google Cloud

Serverless

- Azure Functions, AWS Lambda

Run-Time

- Java, Python, Ruby, Node, .NET

OS

- Ubuntu, CentOS, Red Hat

DB

- MySQL, MongoDB, PostgreSQL, Oracle

CDN

- Akamai, Cloudflare, Fastly, NetScout



Monitor

Time-Series Metrics

- Synthetic / Availability:** pingdom, cacti, gtm3z, Apica, New Relic, AppDynamics
- Tracing:** Lightstep, Zipkin
- Big Data:** unraid, Apsara
- Application (APM):** AWS X-Ray, INSTANA, dynatrace, New Relic, APPDYNAMICS
- Cloud Infrastructure:** STAN, DATADOG, ELDT, WAVEFRONT, signal fx, Grafana, honeycomb, Prometheus, Graficite, CloudWatch
- Traditional Infrastructure:** Nagios, zenoss
- Network:** ThousandEyes, Solarwinds

Unstructured Data

Errors

- SENTRY, Rollbar, Stackify, Airbrake.io, OverOps, RAYGUN

Logs Mgmt

- splunk, sumologic, LOGGLY, logz.io

elastic, **Ingestack**, **ibana**



Manage

Events & Alerts

- Moogsoft, signifi, servicenow, bigpanda

Service Desk

- servicenow, bmc, JIRA

Project Management

- asana, JIRA, Trello

CRM Helpdesk

- zendesk, freshdesk



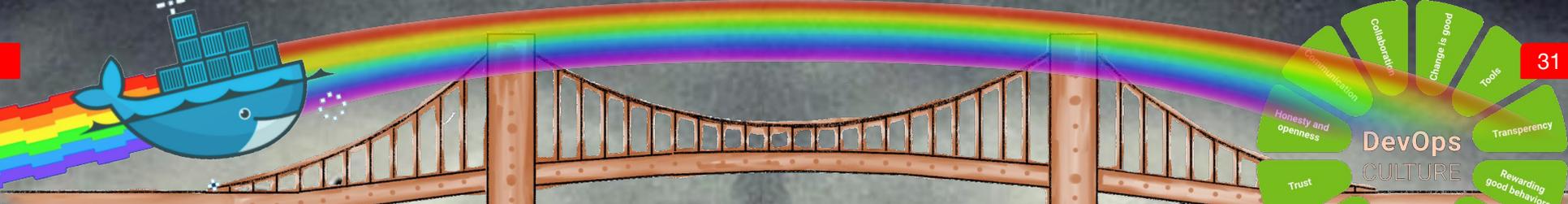
Notify

Escalate

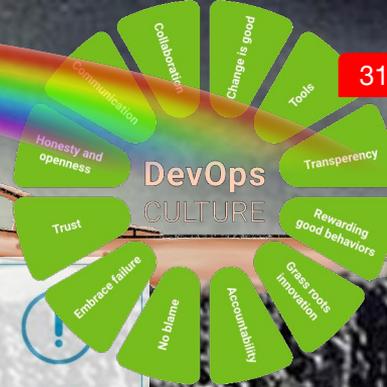
- pagerduty, matters, serverbridge, VictorOps, OpsGenie

Collaboration

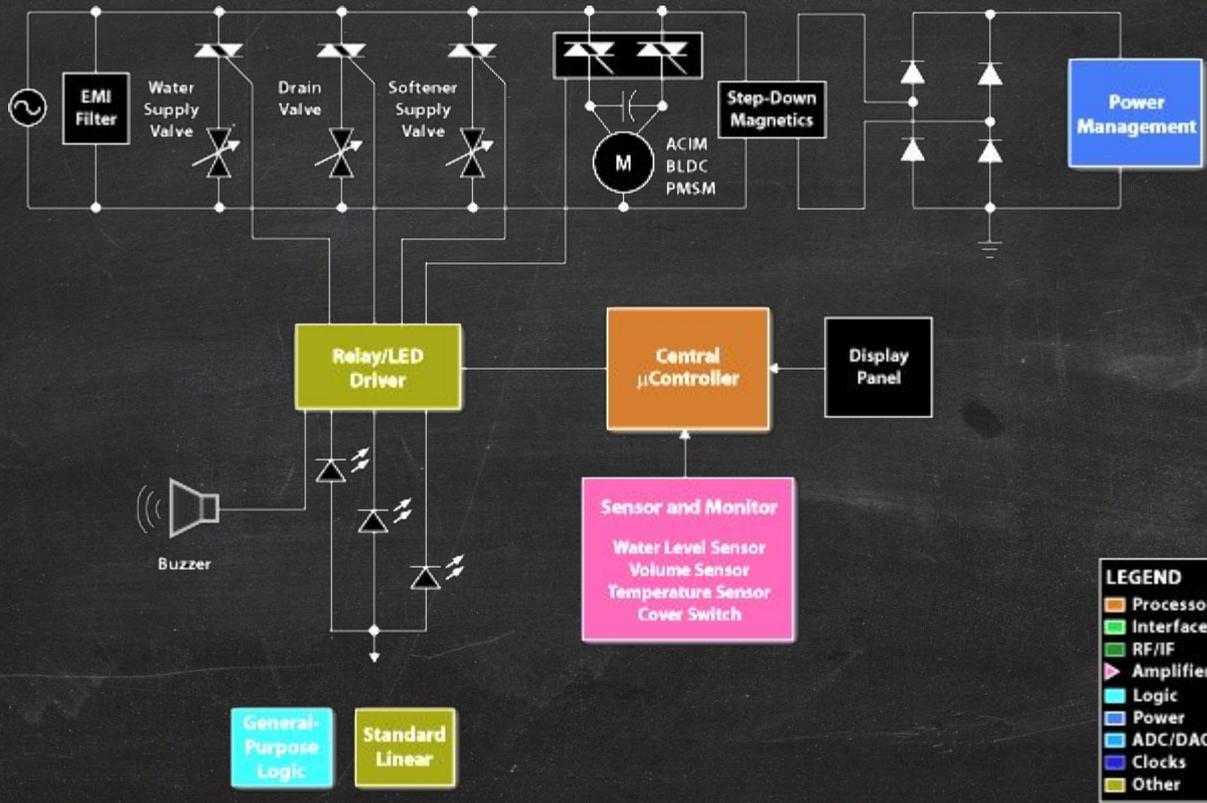
- slack, HipChat, Microsoft Teams, box, twilio



DevOps CULTURE



Build	Test	Deploy	Run	Monitor	Manage	Notify
<p>SCM & VCS</p> <ul style="list-style-type: none"> git, Bitbucket, GitHub, GitLab, mercurial 	<p>Browser</p> <ul style="list-style-type: none"> ARMA, Selenium, WebDriver, Cypress, Karma, Cucumber, Protractor, TestCafe, Sauce Labs, BrowserStack, BrowserMob <p>Load / Performance</p> <ul style="list-style-type: none"> JMeter, SOASTA, BlazeMeter, LOCUST, Gatling, LoadImpact 	<p>Configuration Management</p> <ul style="list-style-type: none"> puppet, CHEF, SALTSTACK, Ansible, PowerShell, CFEngine 	<p>Containers</p> <ul style="list-style-type: none"> docker, rkt <p>Orchestration</p> <ul style="list-style-type: none"> RANCHER, AWS, Kubernetes, Nomad <p>Compute</p> <ul style="list-style-type: none"> Azure, AWS, DigitalOcean, Heroku, IBM Cloud, Oracle Cloud, PaaS, SaaS 	<p>Time-Series Metrics</p> <ul style="list-style-type: none"> Synthetic / Availability: pingdom, catchpoint, gtm360, Apica, ikeynote Tracing: LIGHTSTEP, ELASTIC APM, ELASTICSEARCH Big Data: unraid, Apsara Application (APM): AWS X-Ray, INSTANA, dynatrace, New Relic, APPDYNAMICS Cloud Infrastructure: STREBS, DATADOG, ELASTICSEARCH, WAVEFRONT, Grafana, honeycomb, signal fx, Prometheus, Graphite, CloudWatch Traditional Infrastructure: Solaris, Nagios, zenoss Network: ThousandEyes, SolarWinds, SolarWinds, SolarWinds 	<p>Events & Alerts</p> <ul style="list-style-type: none"> Moogsoft, signifai, servicenow, bigpanda <p>Service Desk</p> <ul style="list-style-type: none"> servicenow, bmc, JIRA <p>Project Management</p> <ul style="list-style-type: none"> asana, JIRA, Trello <p>CRM Helpdesk</p> <ul style="list-style-type: none"> zendesk, freshdesk 	<p>Escalate</p> <ul style="list-style-type: none"> pagerduty, matters, severbridge, VictorOps, OpsGenie <p>Collaboration</p> <ul style="list-style-type: none"> slack, HipChat, Microsoft Teams, box, twilio
<p>Continuous Integration</p> <ul style="list-style-type: none"> circleci, Jenkins, Bamboo, Travis CI, CODESHIP, TeamCity 	<p>Continuous Delivery</p> <ul style="list-style-type: none"> urban (code), Xebialabs, harness, Automic, Spinnaker, Digo, Octopus Deploy, Electric Cloud 	<p>Infrastructure Provisioning</p> <ul style="list-style-type: none"> Terraform, HashiCorp 	<p>Serverless</p> <ul style="list-style-type: none"> Azure, AWS, IBM Cloud, Oracle Cloud <p>Run-Time</p> <ul style="list-style-type: none"> Java, Python, Ruby, Node, .NET <p>OS</p> <ul style="list-style-type: none"> Ubuntu, CentOS, Red Hat <p>DB</p> <ul style="list-style-type: none"> MySQL, MongoDB, Oracle, Microsoft <p>CDN</p> <ul style="list-style-type: none"> Akamai, Cloudflare, Fastly, Amazon 	<p>Errors</p> <ul style="list-style-type: none"> SENTRY, Rollbar, Stackify, Airbrake.io, OverOps, RAYGUN <p>Logs Mgmt</p> <ul style="list-style-type: none"> splunk, sumologic, LOGGLY, logz.io <p>elastic, logstash, elasticsearch, elbana</p>	<p>Events & Alerts</p> <ul style="list-style-type: none"> Moogsoft, signifai, servicenow, bigpanda <p>Service Desk</p> <ul style="list-style-type: none"> servicenow, bmc, JIRA <p>Project Management</p> <ul style="list-style-type: none"> asana, JIRA, Trello <p>CRM Helpdesk</p> <ul style="list-style-type: none"> zendesk, freshdesk 	<p>Escalate</p> <ul style="list-style-type: none"> pagerduty, matters, severbridge, VictorOps, OpsGenie <p>Collaboration</p> <ul style="list-style-type: none"> slack, HipChat, Microsoft Teams, box, twilio
<p>Build</p> <ul style="list-style-type: none"> sbt, Gradle, Maven, Packer, Ansible, Chef, Puppet, SaltStack, Terraform 	<p>Configuration</p> <ul style="list-style-type: none"> SERVERSPEC <p>Security</p> <ul style="list-style-type: none"> OpenSCAP, CERTIFY, Nessus, Qualys, McAfee, Trend Micro, Symantec, Sophos, Avast, AVG, Avira, BitDefender, ESET, Kaspersky, Avast, AVG, Avira, BitDefender, ESET, Kaspersky 	<p>Infrastructure Provisioning</p> <ul style="list-style-type: none"> Terraform, HashiCorp 	<p>Serverless</p> <ul style="list-style-type: none"> Azure, AWS, IBM Cloud, Oracle Cloud <p>Run-Time</p> <ul style="list-style-type: none"> Java, Python, Ruby, Node, .NET <p>OS</p> <ul style="list-style-type: none"> Ubuntu, CentOS, Red Hat <p>DB</p> <ul style="list-style-type: none"> MySQL, MongoDB, Oracle, Microsoft <p>CDN</p> <ul style="list-style-type: none"> Akamai, Cloudflare, Fastly, Amazon 	<p>Errors</p> <ul style="list-style-type: none"> SENTRY, Rollbar, Stackify, Airbrake.io, OverOps, RAYGUN <p>Logs Mgmt</p> <ul style="list-style-type: none"> splunk, sumologic, LOGGLY, logz.io <p>elastic, logstash, elasticsearch, elbana</p>	<p>Events & Alerts</p> <ul style="list-style-type: none"> Moogsoft, signifai, servicenow, bigpanda <p>Service Desk</p> <ul style="list-style-type: none"> servicenow, bmc, JIRA <p>Project Management</p> <ul style="list-style-type: none"> asana, JIRA, Trello <p>CRM Helpdesk</p> <ul style="list-style-type: none"> zendesk, freshdesk 	<p>Escalate</p> <ul style="list-style-type: none"> pagerduty, matters, severbridge, VictorOps, OpsGenie <p>Collaboration</p> <ul style="list-style-type: none"> slack, HipChat, Microsoft Teams, box, twilio
<p>Repositories</p> <ul style="list-style-type: none"> PyPI, Maven, Nexus, npm, Docker Hub, Artifactory 	<p>Code</p> <ul style="list-style-type: none"> JUnit, OUnit, Selenium, Cucumber, Jasmine, xUnit.net, pytest, OUnit 	<p>Security</p> <ul style="list-style-type: none"> Vault 	<p>Serverless</p> <ul style="list-style-type: none"> Azure, AWS, IBM Cloud, Oracle Cloud <p>Run-Time</p> <ul style="list-style-type: none"> Java, Python, Ruby, Node, .NET <p>OS</p> <ul style="list-style-type: none"> Ubuntu, CentOS, Red Hat <p>DB</p> <ul style="list-style-type: none"> MySQL, MongoDB, Oracle, Microsoft <p>CDN</p> <ul style="list-style-type: none"> Akamai, Cloudflare, Fastly, Amazon 	<p>Errors</p> <ul style="list-style-type: none"> SENTRY, Rollbar, Stackify, Airbrake.io, OverOps, RAYGUN <p>Logs Mgmt</p> <ul style="list-style-type: none"> splunk, sumologic, LOGGLY, logz.io <p>elastic, logstash, elasticsearch, elbana</p>	<p>Events & Alerts</p> <ul style="list-style-type: none"> Moogsoft, signifai, servicenow, bigpanda <p>Service Desk</p> <ul style="list-style-type: none"> servicenow, bmc, JIRA <p>Project Management</p> <ul style="list-style-type: none"> asana, JIRA, Trello <p>CRM Helpdesk</p> <ul style="list-style-type: none"> zendesk, freshdesk 	<p>Escalate</p> <ul style="list-style-type: none"> pagerduty, matters, severbridge, VictorOps, OpsGenie <p>Collaboration</p> <ul style="list-style-type: none"> slack, HipChat, Microsoft Teams, box, twilio







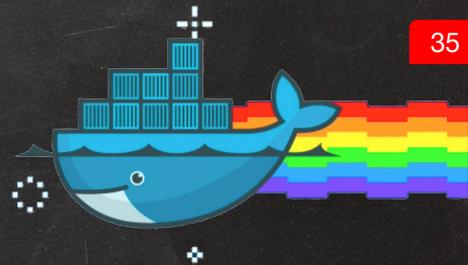
PURE DOCKERFREE

100% Certified NOT Dockerized





СПАСИБО ЗА ВНИМАНИЕ



:iTechArt



Show notes: <https://be34.me/show-notes>

Remarkable
people