

# Build Book

*This page is a working document owned jointly by monetization and techops - please add relevant information to this documentation when it is discovered that info is missing from this document*

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## Infrastructure

Monetization is structured as follows:

- A set of web servers directly serving traffic
  - Some are payments servers (main production host: payments.playdom.com)
  - Some are ad servers (main production host: ads.playdom.com)
  - One is a QA server (qa-payments.playdom.com)
- A set of databases
  - One read/write database
  - One read-only database
  - One backup/offline-query database
- A logs database - is used by all environments (production and QA)
- A CDN Service - currently Akamai (offer0-a.akamaihd.net)
- A related CDN Seed server that hosts Monetization statics for access by the CDN

## Web Server

1. **Provision linux machine-** Ubuntu 10.04 - Tomcat Webserver
  - Type
    - For production:
      - Softlayer: Hardware machine with at least 12 total cores and at least 24GB RAM.
      - Nap7: VM (specs TBD)
    - For Integration/QA: VM With at least 6 total cores and at least 12GB RAM.
  - Naming:
    - production payments server: offer-app\* .playdom.com
    - production ad server: offer-ad-app\* .playdom.com
    - integration server: offer-integration\*.vm.dfw.playdom.com
    - QA server: offer-qa\*.vm.dfw
2. **Permissions**
  - For Production: <Please someone describe production permissions>
  - For QA/Integration: Give standard access to all developers (users in linux group 'offer')
3. **Patching** - Ensure new hosts have the same OS and security patches as the rest of the monetization machines for the given environment. Patches should be planned separately from bringing up a new machine. <get link to additional information (from stan?)>
4. **Java-** Install Java 1.6 /home/tomcat/java 1.6.0\_19-b04 as of 4/24/2013
  - Install Unlimited Strength Jurisdiction Policy Files local\_policy.jar and US\_export\_policy.jar under <jre

path>/lib/security . The files can be downloaded from <http://www.oracle.com/technetwork/java/javase/downloads/jce-6-download-429243.html>

5. **Tomcat**- Install Tomcat 6 instances at .../tomcat10 and .../tomcat20

- tomcat10 and tomcat20 are sufficient, and inherently support active inactive model. as of 04/24/2013 <link to further documentation?>

6. **Puppet**- Configure puppet to deploy the appropriate configuration files <insert link to puppet config>

- Non-comprehensive list: context.xml, server.xml, log4j.xml, and tomcat-users.xml in /home/tomcat/tomcat\*0/conf/ and /home/tomcat/control\_tomcat.sh
- Network interface: If adding a new box at softlayer, check whether softlayer gave you a box with a bonded interface. If bonded, nginx configuration will need to be changed accordingly (nginx::offer-bond)
- Cron - One machine (the primary) per environment should run the cron jobs
  - Production and integration should have the cron configured
  - QA machines don't have a cron configured currently
  - *Todo: Monetization should change this so the cron is run identically on all boxes (by using locking at the application level)*
- Standard user permissions for linux group 'offer' (limited sudo access and general privileges).
- Standard Zenoss Monitoring
- Environment label java:comp/env/application\_environment - <is this configured in puppet or in the build process?>

7. **Deployment**

- Add new host to list of machines to deploy to in the Jenkins build jobs
  - Add new host to offer properties file:
    - Production and Integration: <https://mayhem.playdom.com/release-ops/trunk/game/offers/offer.prod.properties>
    - For QA: <https://mayhem.playdom.com/release-ops/trunk/game/offers/offer.qa.properties>
    - *Note: these property files can be overridden in the Jenkins configuration, but this is considered bad practice*
  - Add new host to Jenkins overrides:
    - QA: there are no overrides.
    - Production and Integration - modify the following jobs under the OFFERS-PROD project:
      - OFFER\_switch\_PROD\_e1\_e2: Choice prod\_hosts - add the host to the first choice (all servers) and the other appropriate choice (second [payments](#) or third [ads](#))
      - OFFERS\_deploy\_to\_PROD\_inactive: Choice servers - same as OFFER\_switch\_PROD\_e1\_e2's Choice prod\_hosts (above)
      - OFFERS\_PROD\_restart: Choice servers - same as OFFER\_switch\_PROD\_e1\_e2's Choice prod\_hosts (above)
- Environment label java:comp/env/application\_environment - <is this configured in puppet or in the build process?>

8. **Monitoring**

- Add the server to the list /etc/hosts on nexus01 (this is important only because there are scripts that rely on the monetization servers being comprehensively and correctly listed in /etc/hosts)
- Additional Zenoss templates - Some zenoss monitoring will have been added via puppet, but some additional zenoss templates (for tomcat, mysql, etc) need to be added manually. <Todo for someone who knows how: please fill in details>
  - To verify that monitoring has been added, call a zenoss API <which one? Docs?> to get information on this machine. <details?>
- Note that monetization's health page is at the path /health.jsp
  - For example on QA: offer-qa01.vm.dfw/health.jsp

9. **Whitelisting**

- Internal systems
  - Add the server to the list of servers that need to be whitelisted for Money Pool VIPs (formerly

known as GSAT VIPs) here: <https://docs.google.com/a/playdom.com/spreadsheet/ccc?key=0AudN5AJDOz7HdGhwTWxla3l4bINBSW1CaFIZSXBMOXc&usp=sharing>

- Ensure that all games have the new server in their Money Pool VIPs (ie that they are up to date with that document).
  - External partners - no one at the moment
10. **Load Balancers** - giving the machine real traffic
- a. Ensure all other steps are completed.
  - b. Have monetization validate the machine.
  - c. Schedule a time with monetization to add the machine to the appropriate load balancer.
  - d. Add machine to the load balancers:
    - For production payments server: payments.playdom.com and payments-inactive.playdom.com
    - For production ad server: ads.playdom.com and ads-inactive.playdom.com,
    - For integration payments server: int-payments and int-payments-inactive
    - For integration ad server: int-ads and int-ads-inactive
    - For QA app server: qa-payments
    - For QA ad server: qa-ads

## Load Balancer

### 1. VIPs (DNS)

- Format for load balancer hostnames:
  - `<environment><function><-inactive>.playdom.com`
  - "`environment`" is omitted for production and "`-inactive`" is omitted for active
- Ensure the following environments exist or are created:
  - int - (integration)
  - qa - (QA)
  - (production: omit the environment tag)
- Ensure the following functions exist
  - payments
  - ads
- Ensure that each have
  - inactive - (inactive server)
  - (active server: omit tag)
- Ensure that each VIP supports **http** and **https**

## Database Server

1. **Provision machine**- Ubuntu 10.04 with at least 260GB disk space
  - For production: Hardware machine
  - For Integration/QA: VM
2. **Patching** - Ensure new hosts have the same OS and security patches as the rest of the monetization machines for the given environment.
3. Install MySQL server
  - Hostnames:
    - QA: qa-db03.playdom.com
    - Integration: offer-integration01.vm.dfw
    - production: offer-db0\*.playdom.com
  - Schema - install the schema
    - Integration and QA - For now, copy the schema (no data) from production
    - Schema (offers) to be loaded can be found on offer-db01,offer-db02,offer-db03.
    - `mysqldump -uUSERNAME -pPASSWORD -hHOSTNAME --database offers --no-data --triggers --routines > dumpfile.sql`
    - Copy the dump to the target server and restore the dump `mysql -uUSERNAME -pPASSWORD offers < dumpfile.sql`

- Production - N/A [We should never need to create a production database from scratch.](#)
- Data
  - On nexus01 in prod\_offer, run:
    - copy all the configuration tables to the new database (From production)
    - copy the exchange\_rate table too
    - Once the webserver is up and running, run [<host>/zong/price](#) to populate the zong\_prices table
- Users
  - For all databases:

```
CREATE DATABASE offers;

CREATE USER 'monetizationRO'@'localhost' IDENTIFIED BY
'<password1>';
GRANT SELECT ON offers.* TO 'monetizationRO'@'localhost';

CREATE USER 'monetization'@'localhost' IDENTIFIED BY '<password2>';
GRANT ALL ON offers.* TO 'monetization'@'localhost';
```

- A different password should be used for each environment.
- Give write access to all users under the linux group 'offer'
  - Have each user give their password hash and set their password with it. The hash can be obtained by running

```
select password('<your password>');
```

## Monetization logs server

## Jenkins

- <https://build-hq01.playdom.com/view/J-R/view/OFFERS-PROD/>
- <https://build-hq01.playdom.com/view/J-R/view/OFFERS/>

Disk layout on build host:

```
/home/hudson/
    game/                <--
https://mayhem.playdom.com/release-ops/trunk/game/
    build-script/       <--
https://mayhem.playdom.com/release-ops/trunk/game/offers
    src-code/           <--
https://mayhem.playdom.com/offers/$SVN_PATH (e.g., trunk/, tags/m153)
```

## Ant

- <https://mayhem.playdom.com/release-ops/trunk/game/offers/> <-- used by Jenkins for creating WAR and distributing WAR to deployment targets

- <https://mayhem.playdom.com/offers/trunk/build.xml> <-- used by local devs and by Jenkins to compile Java classes and assemble the assets into a WAR compatible directory structure.

## Puppet

❌ Puppet configs have moved to <https://github.wdig.com>.  
Git doesn't provide an auth scheme that is file-specific,  
and since many of the puppet configs have passwords,  
TechOps is unable to share this repo with developers. (March 20, 2013)  
So the files linked below are **not** current, but are helpful for structural context.

- <https://mayhem.playdom.com/opt/operations/puppet/manifests/nodes-offer.pp>
- <https://mayhem.playdom.com/opt/operations/puppet/modules/nginx/templates/offer>
- <https://mayhem.playdom.com/opt/operations/puppet/modules/nginx/files/offer>
- <https://mayhem.playdom.com/opt/operations/puppet/modules/ntomcat/manifests/offer.pp>
- <https://mayhem.playdom.com/opt/operations/puppet/modules/ntomcat/templates/offer>
- <https://mayhem.playdom.com/opt/operations/puppet/modules/ntomcat/templates/offer-ad>
- <https://mayhem.playdom.com/opt/operations/puppet/modules/ntomcat/templates/offer-qa>

## References

- <https://jira.playdom.com/browse/OPSREQUEST-22840>
- <https://jira.playdom.com/browse/OPSREQUEST-7500>
- <https://jira.playdom.com/browse/MONEY-4972>