# Estate Valuations & Pricing Systems, Inc.
# Infrastructure Capacity and Monitoring

## Overview

This document describes the available capacity of the EVP Systems production infrastructure, and the monitoring done on that infrastructure.

## Capacity

EVP Systems maintains four major public-facing infrastructures in its production environment: the back-end for EVP Office, EVP Everywhere, EVP Upload, and the EVP Systems website.

### Back-End of EVP Office

The back-end for EVP Office (the “Data Center”) has two full installations running in geographically disparate Amazon Web Services Availability Zones. Load is automatically distributed between both installations by a load-balancer, or the surviving instance if one is down. Available CPU capacity on all Data Center servers is at least three times (300%) average usage over thirty days; available RAM is at least three times (300%) average usage over thirty days; available local disk is at least three times (300%) average usage over thirty days; available network disk is eight exabytes.

### EVP Everywhere and EVP Upload

EVP Everywhere and EVP Upload share servers. They have two full installations running in geographically disparate Amazon Web Services Availability Zones. Load is automatically distributed between both installations by a load-balancer, or the surviving instance if one is down. Available CPU capacity on all EVP Everywhere servers is at least three times (300%) average usage over thirty days; available RAM is at least three times (300%) average usage over thirty days; available local disk is at least two times (200%) average usage over thirty days; available network disk is eight exabytes.

### EVP Systems Website

The EVP Systems website has a single installation running in a single Amazon Web Services Availability Zones. Available CPU capacity on the website server is at least three times (300%) average usage over thirty days; available RAM is at least one-and-a-half times (150%) average usage over thirty days; available local disk is at least three times (300%) average usage over thirty days; available network disk is eight exabytes.

### Databases

Databases at EVP Systems are multi-Availability Zone RDS instances at AWS, with automatic failover. Available CPU capacity on databases is at least three times (300%) average usage over thirty days; free space is at least 8G over maximum use.

## Monitoring

All servers in the EVP Systems production infrastructure are monitored by automatic systems, with alerts generated to the technical staff when metrics move outside of predetermined boundaries.

The public availability of EVP Systems servers is monitored by Uptime Robot (`www.uptimerobot.com`), a third-party service that repeatedly queries the servers for an expected response and sends alerts if that response is incorrect or unavailable.

Logs (including Data Center logs, EVP Everywhere and EVP Upload logs, and system logs) are monitored by Papertrail (`www.papertrailapp.com`), a third-party service that collects logs and subjects them to various tests. The following tests are conducted, and alerts sent if triggered:

- Data Center: Crash, data-provider invalid response, data-provider communication failure, unexpected client disconnect, invalid client request
- EVP Everywhere: Crash, response XSD validation failure
- EVP Upload: Crash
- System: Invalid login, repeated access attempt ban, rootkit detection warnings

Server metrics are also monitored by AWS CloudWatch. If any of the below-listed resources exceed the maximum value when averaged over five minutes, an automatic alert is set to the technical staff.

| **Server Type** | **Resource** | **Maximum** |
|---|---|---|
| Data Center | CPU | 50.0% |
| EVP Everywhere & Upload | CPU | 50.0% |
| Web Server | CPU | 50.0% |
| Database | CPU | 75.0% |
| Data Center | Unhealthy Hosts | 0 |
| EVP Everywhere & Upload | Unhealthy Hosts | 0 |
| Web Server | Unhealthy Hosts | 0 |
| Data Center | Disk Usage | 50% |
| EVP Everywhere & Upload | Disk Usage | 50% |
| Web Server | Disk Usage | 50% |

| | | |
|---|---|---|
| Database | Free Space | 8G |
| Data Center | RAM | 66.6% |
| EVP Everywhere & Upload | RAM | 75.0% |
| Web Server | RAM | 90.0% |

Additionally, EVP Systems conducts a monthly security review, as documented in “Intrusion Detection and Audit Process.”