

# Practical Server Monitoring

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#slack: creativearc

# Creative Arc

- Founded 2003
- HQ in Minneapolis
- Team of 6. 83.33% conference attendance
- 200+ EE Sites (3 sites still on 1.6 😳) 12 years on EE. I checked!
- 3 coffee machines
- 1 Han Solo



# About Me

- Wife and 4 kids
- 13/10/5/3
- I require:
- coffee
- skiing
- biking
- Psssst! Paul, turn your phone on!

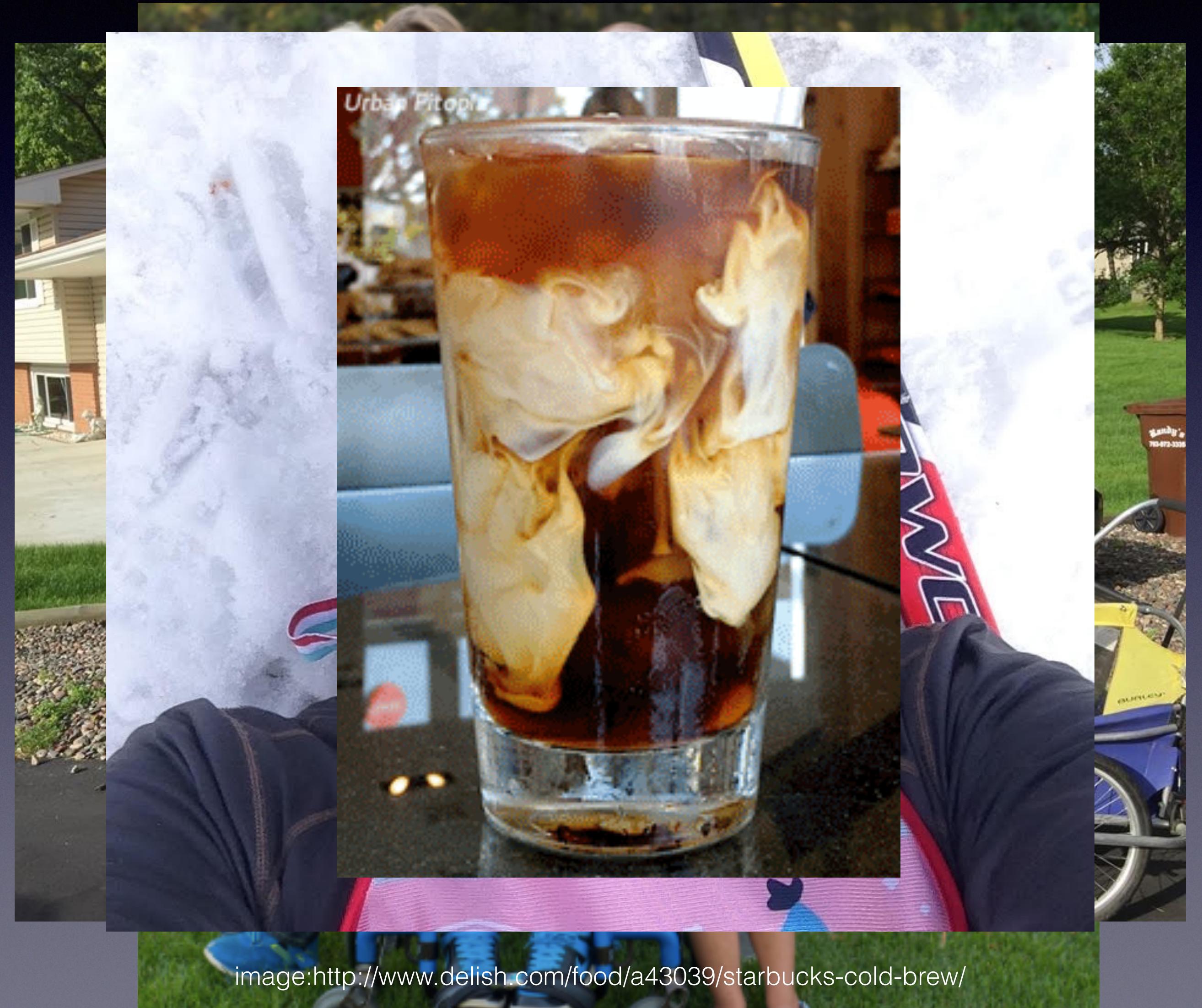


image:<http://www.delish.com/food/a43039/starbucks-cold-brew/>

# Today's topics

- How we got into monitoring
- Redefining “Uptime”
- Strategies
- Tools
- Brief demonstration

# Stepping up our game

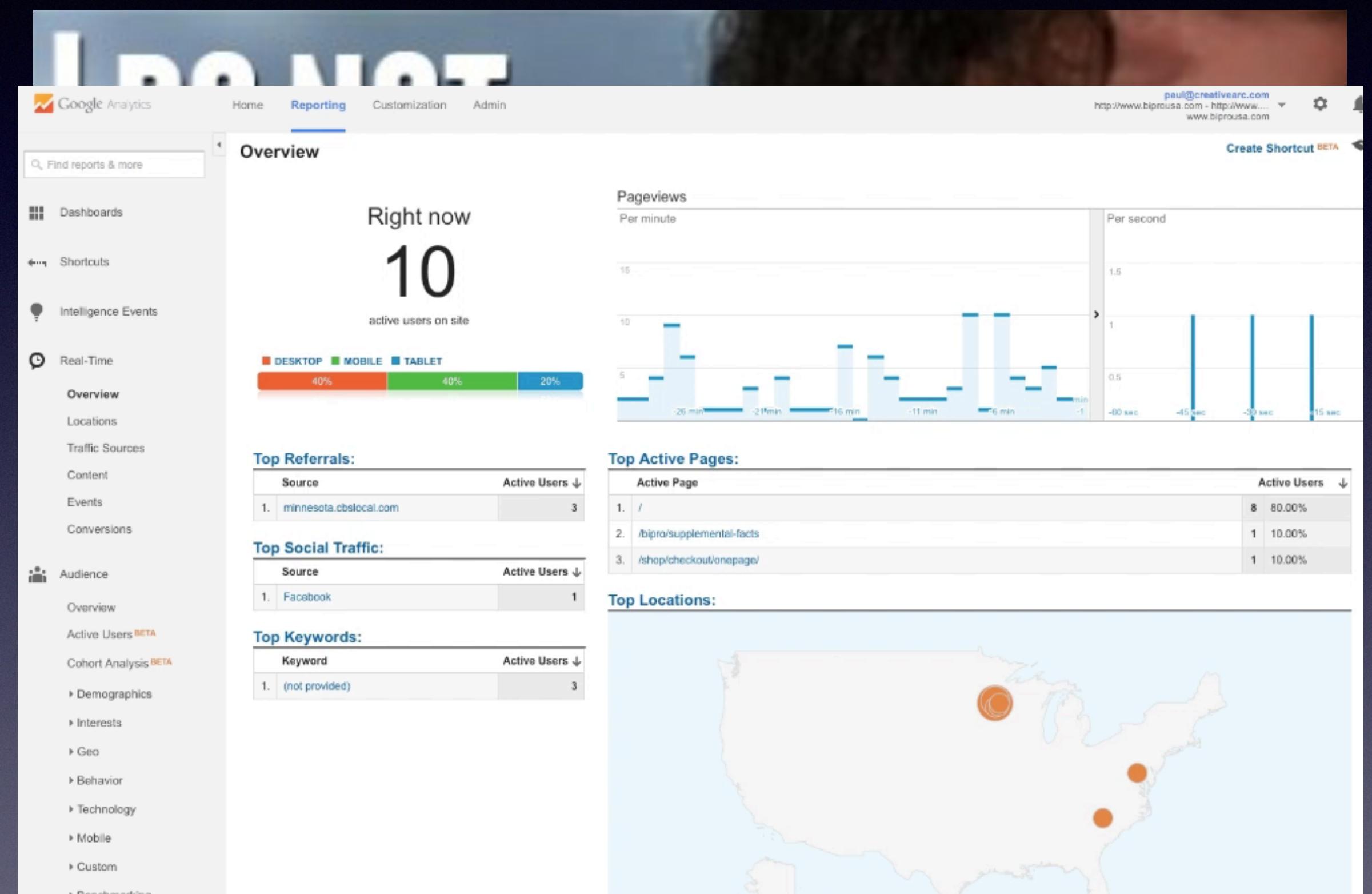
- We monitor because we host
- We host (100+ sites) because customers asked us to
- We don't like scary voicemails
- Background on monitoring: corporate!
- An outage resulted from the best intentions (daily backups)



image: <https://www.callcentrehelper.com/how-best-to-deal-with-angry-customers-184.htm>

# What's “up”?

- Diluted term, like website traffic “hit.”
- Uptime should redefined: functioning optimally
- Uptime should redefined: functioning optimally *according to the customer*
- Most of our outages occur when a server is “up.”
- 3 examples:



## MEANS.

# Uptime: many nuances

- Developer mistake
- Hosting/billing mistake
- Low disk space
- Expired Domain or SSL cert
- DNS problem
- Software/API License expiration
- mysqld died

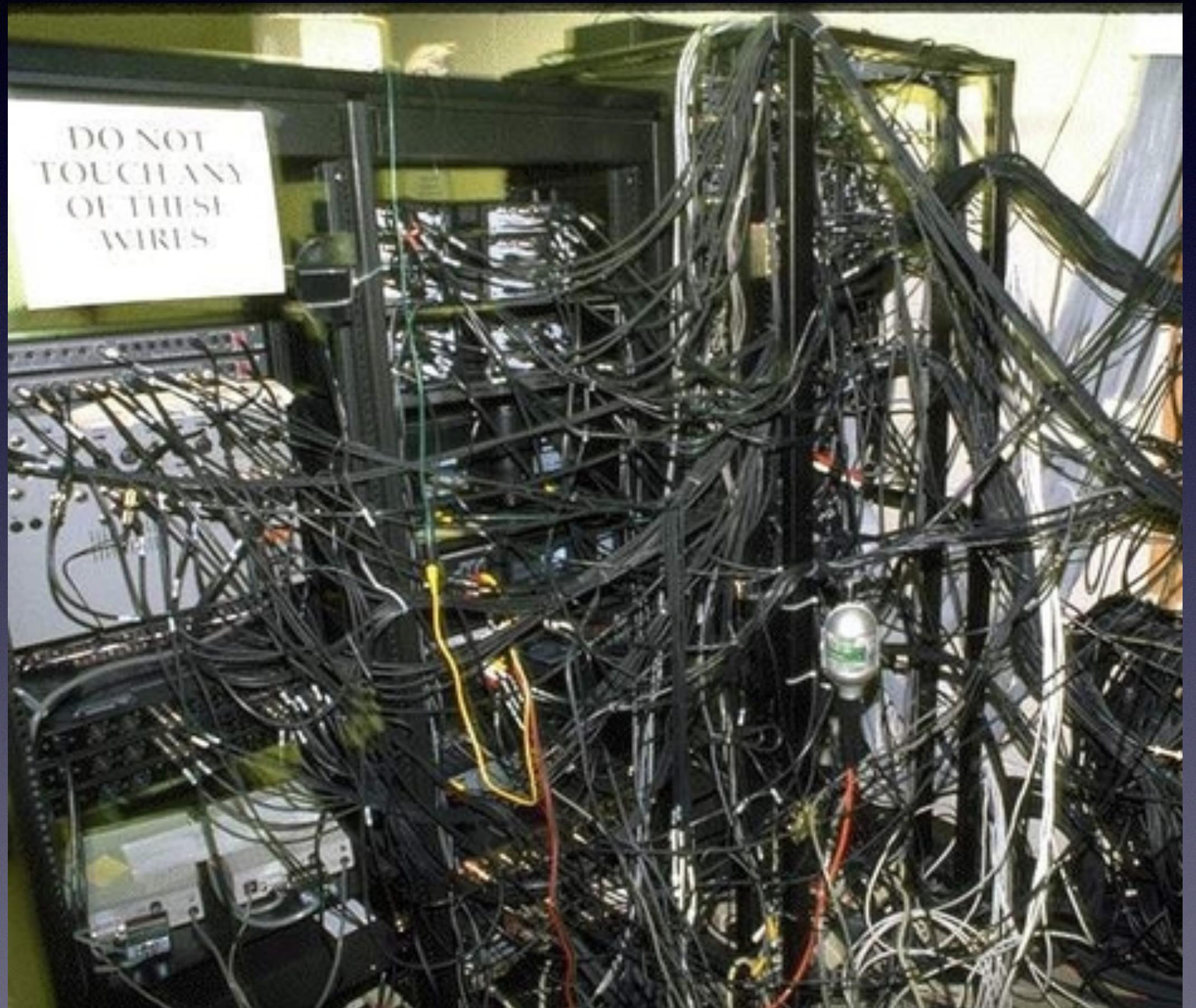


image: <https://memeguy.com/photo/179966/redditcom-server-room>

# Monitoring Strategies

- What can be monitored?
  - Basics: does the website load?
  - Specifics: presence of text, data, elements.
  - Speed of delivery/page load
  - Transactional: form submissions
  - Server vital signs: memory, load, bandwidth, traffic sources, even temperature

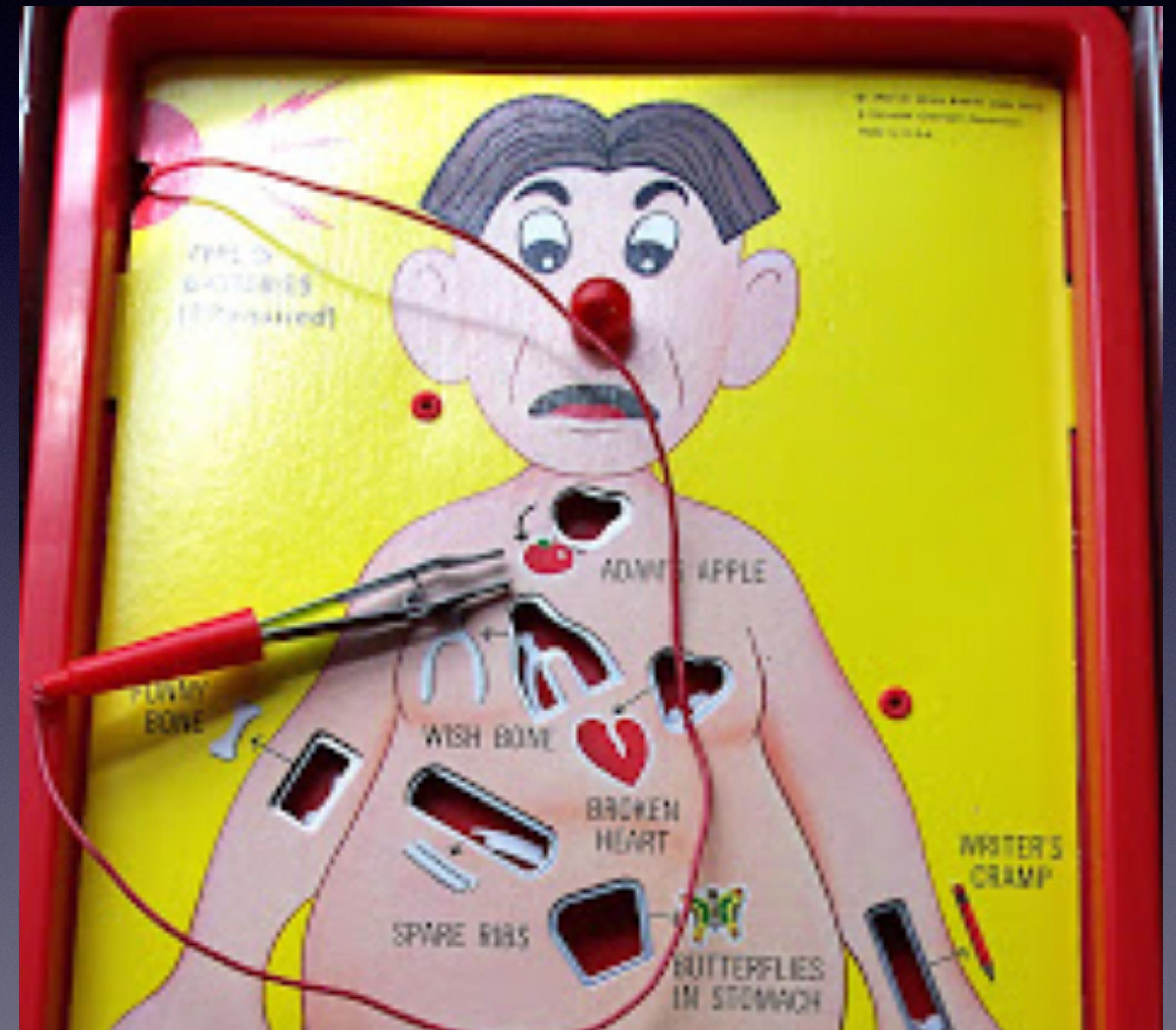


image: <http://sparethymeink.blogspot.com/2012/06/operation-card.html>

# Monitor with specificity

- Presence of text, e.g. “Copyright Creative Arc, Inc” (make sure page isn’t blank)
- Search page: does “SKU 1124” yield results?
- Monitor what the customer *cares* about. They expect the site to be online. Do essential features / transactions / emails work?

SEND US A MESSAGE

---

Name

Email

Phone

Your message

Prevent Spam!

I'm not a robot   
reCAPTCHA  
Privacy - Terms

Submit



# Alerting Strategies

- Who is alerted?
  - Individuals
  - Groups (e.g. Just IT/Dev, Management)
- What is the alert method?
  - Email. Text/SMS. Chat.
  - App. Audio/visual



# Don't Wuphf yourself

- **Frequency**

- Define the alert cycle: 30 seconds to 5 minute polling
- Allow for normal usage/behavior without alerts (15 seconds too frequent for simple sites)
- Incidents are escalated if they persist after one polling cycle

- **How do alerts escalate?**

- e.g. Initial alert notifies dev team
- The next alert goes to the boss

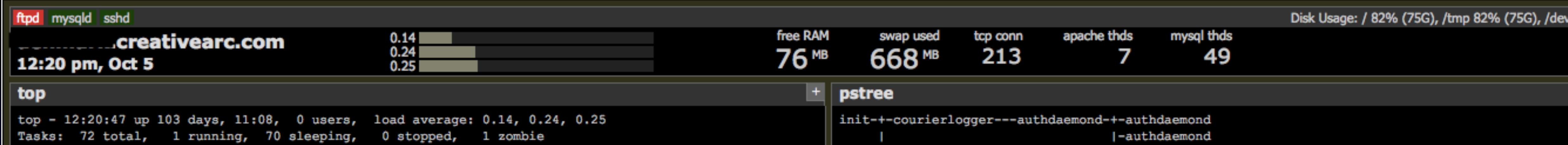


image: <https://www.redbubble.com/people/decentart/works/25852673-wuphf-the-office?p=sticker>

# 4 Monitoring Methods

- #1 Spreadsheet inventory
- #2 External monitoring: Pingdom
- #3 Internal monitoring: Monit
- #4 M/Monit

<b>creativearc.com</b>	# Domains: 30 Mail Storage Total: 289M	Plesk: 12.5.30 CentOS 6 1205160608.10	mysql Ver 14.14 Distrib 5.5.30, for Linux (x86_64) using readline 5.1	PHP 5.4.13 (cli) (built: Mar 14 2013 08:57:49) SSL Labs Security Rating: <a href="#">Verify in browser</a>	Domains w/ alerts: 24 Not Respon
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Domain	Disk usage	Bandwidth Usage	IP (yellow=IP mismatch)	CMS version	Backup?	email usage	DNS server	Domain expire (days)	MX	SSL expires (days)	GA
[REDACTED] EE admin user: [REDACTED] dir: /var/www/vhosts/[REDACTED] com: Robots? <a href="#">View</a>	2.40 GB	8.38 MB	70.32.80.214	EE: 281 281 2379-1091-1942-2654 license_number	Yes	4.0K	er: NS1.HEATSEEKER-ITS.NET	342 <a href="#">test it!</a>	asp.reflexion.net. <a href="#">toolbox</a>	140: <a href="#">test it!</a>	UA-136378-19
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[REDACTED] EE admin user: [REDACTED] dir: /var/www/vhosts/biproca.com user: nick dir: /var/www/vhosts/biproca.com/httpdocs: Robots? No	275 MB	3.88 MB	70.32.80.214		Yes	4.0K	er: PDNS11.DOMAINCONTROL.COM	1747 <a href="#">test it!</a>	biproca.com has no MX record <a href="#">toolbox</a>	140: <a href="#">test it!</a>	UA-88243900-
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creativearc.com EE admin user: denmark dir: /var/www/vhosts/denmark.creativearc.com user: creativearc dir: /var/www/vhosts/creativearc.com: Robots? <a href="#">View</a>	976 MB	18.1 MB	70.32.87.202	EE: '273' '273' 1590-6823-7056-8828	Yes	4.0K	er: NS1.MEDIATEMPLE.NET	4020 <a href="#">test it!</a>	y 10 ALT1.ASPMX.L.GOOGLE.com. <a href="#">toolbox</a>	52: <a href="#">test it!</a>	UA-6042006-23
denmark.creativearc.com EE admin user: denmark dir: /var/www/vhosts/denmark.creativearc.com: Robots? <a href="#">View</a>	52.2 MB	19.4 KB	70.32.80.214	EE: !!! No	4.0K	er: NS1.MEDIATEMPLE.NET	4020 <a href="#">test it!</a>	y 30 ASPMX2.GOOGLEMAIL.com. <a href="#">toolbox</a>	52: <a href="#">test it!</a> !!! No		
[REDACTED] EE admin user: [REDACTED]	415 MB	3.16 MB	70.32.80.214	EE:	Yes	4.0K	NS01.DOMAINCONTROL.COM	248 <a href="#">test it!</a>	mtp.secureserver.net. <a href="#">toolbox</a>	140: <a href="#">test it!</a>	UA-19199564-

# #2: External Monitoring: Pingdom

- **What does it do?**
  - Web-based service
  - Polls your site at regular intervals
  - Monitors http response, page speed
  - Transactional available: login, test something. Test email form



# #2: External Monitoring: Pingdom

- Why use it?
  - Easy. Little to no setup. (minutes of work)
  - Monitors from different geographic locations.
  - There's an app for that.
  - Doesn't use your infrastructure.
  - Monthly fee (minimal expense)



# #2: External Monitoring: Pingdom

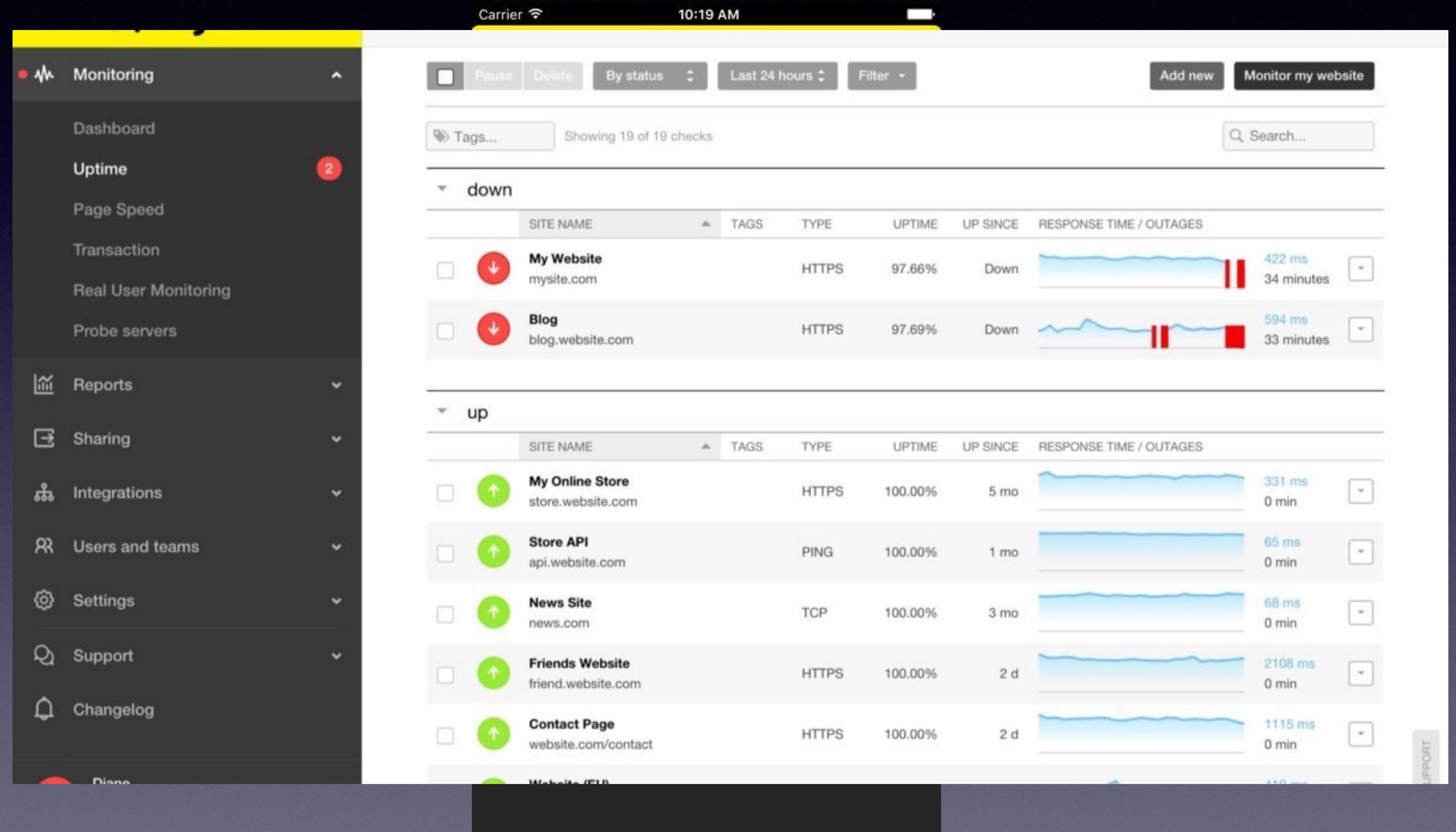
- **What are its limits?**
  - Can only evaluate from the outside.  
Perceives your site how a human would.
  - Doesn't know about bandwidth, disk space, server issues.
  - Apart from notifying you, it can't take action.



image: <http://starwars.wikia.com/wiki/Macrobinoculars>

# #2: External Monitoring: Pingdom

- What do alerts look like?
  - Email
  - Text
  - App Alerts
  - Web dashboard

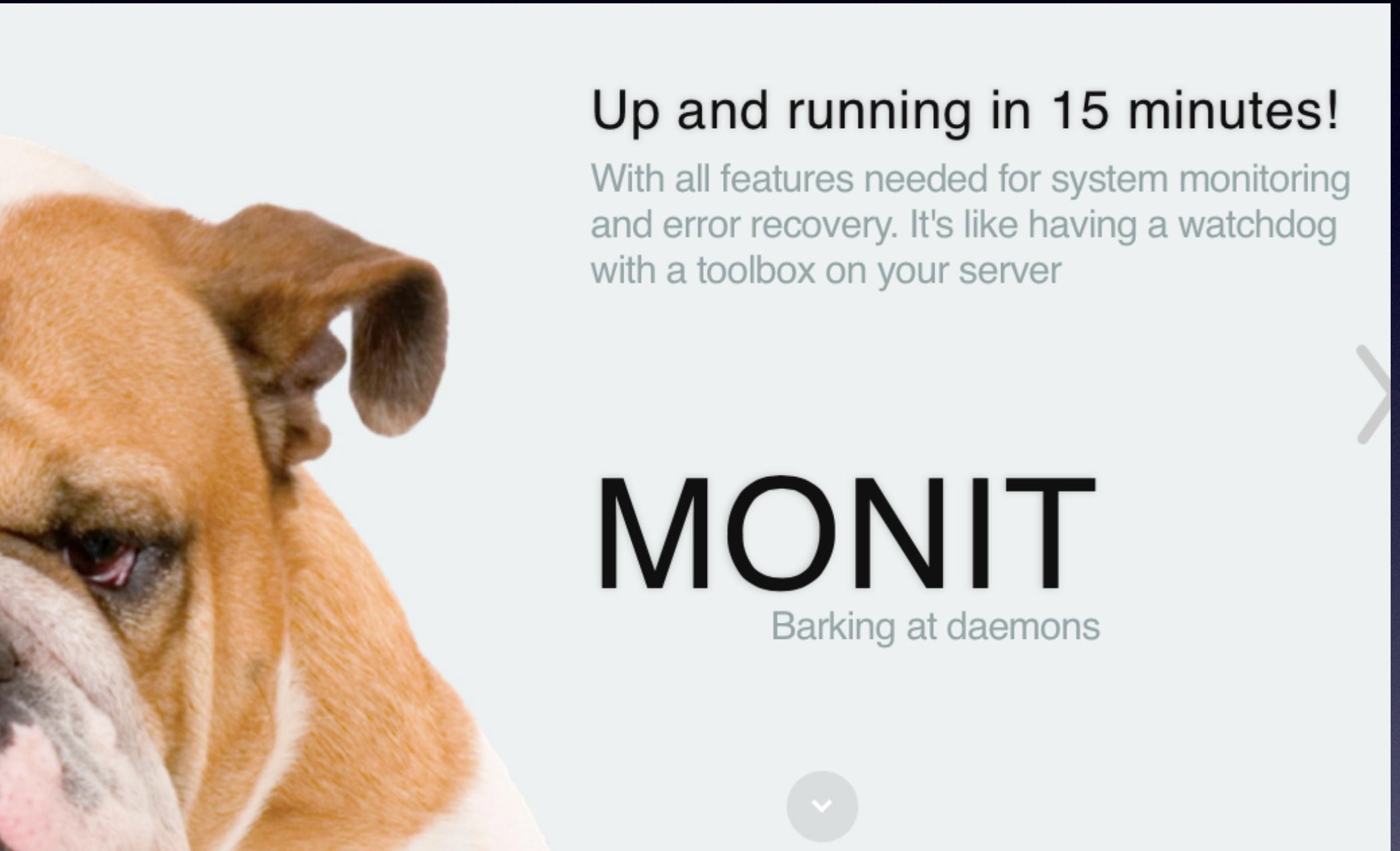


images:

<http://bristowe.com/blog/2013/12/30/monitoring-sitefinity-websites-with-pingdom>  
<https://itunes.apple.com/us/app/pingdom/id298055896?mt=8>  
<https://www.pingdom.com/resources/api>

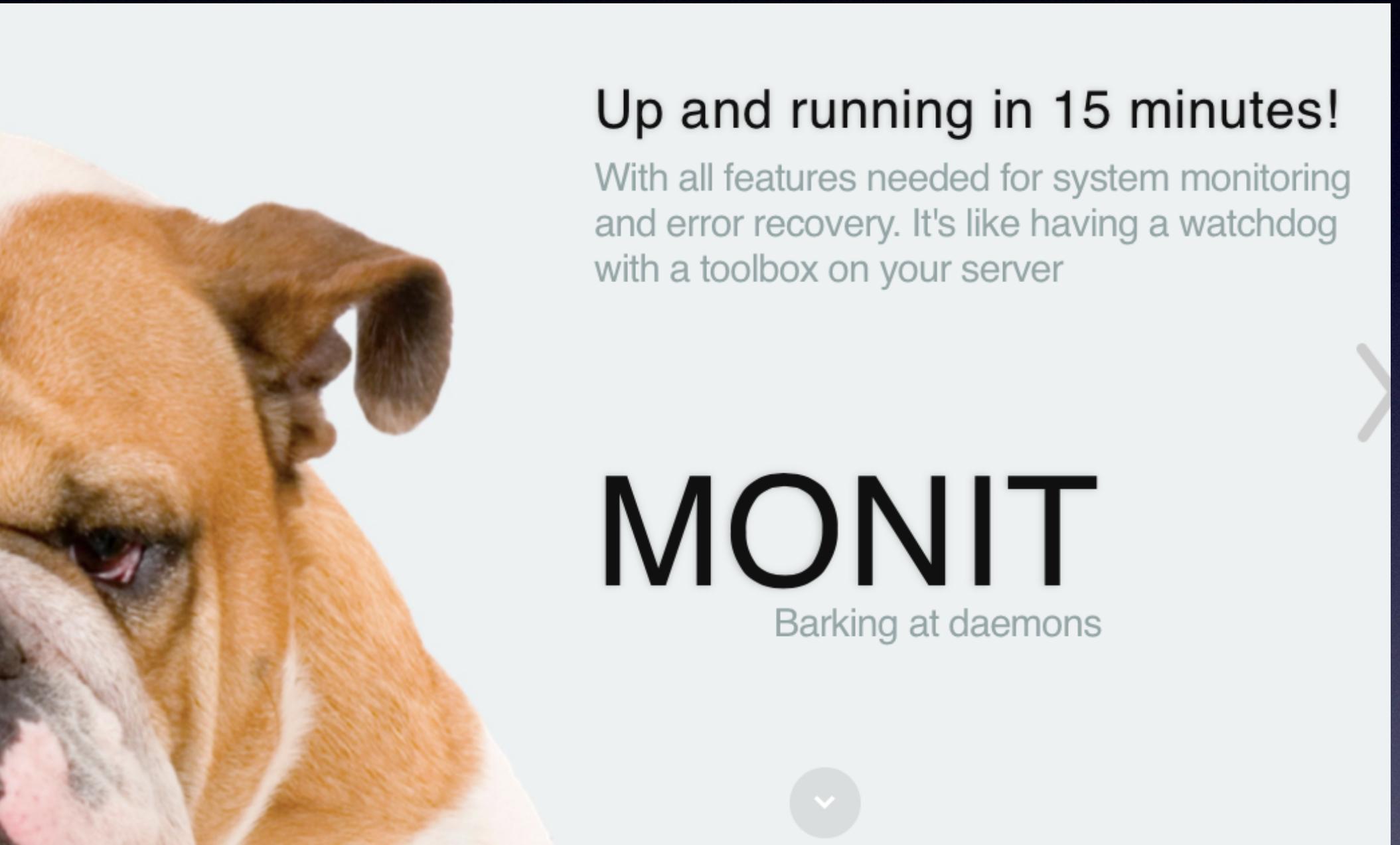
# #3: Internal Monitoring, Monit

- **What does it do?**
  - Installed at server lever (web server)
  - Runs as Daemon with web interface
  - Polls your server (and sites) at regular intervals
  - Key distinction: In addition to monitoring and alerting, can take action. (restart process, empty /tmp files, restart entire server, add cloud storage/resources)



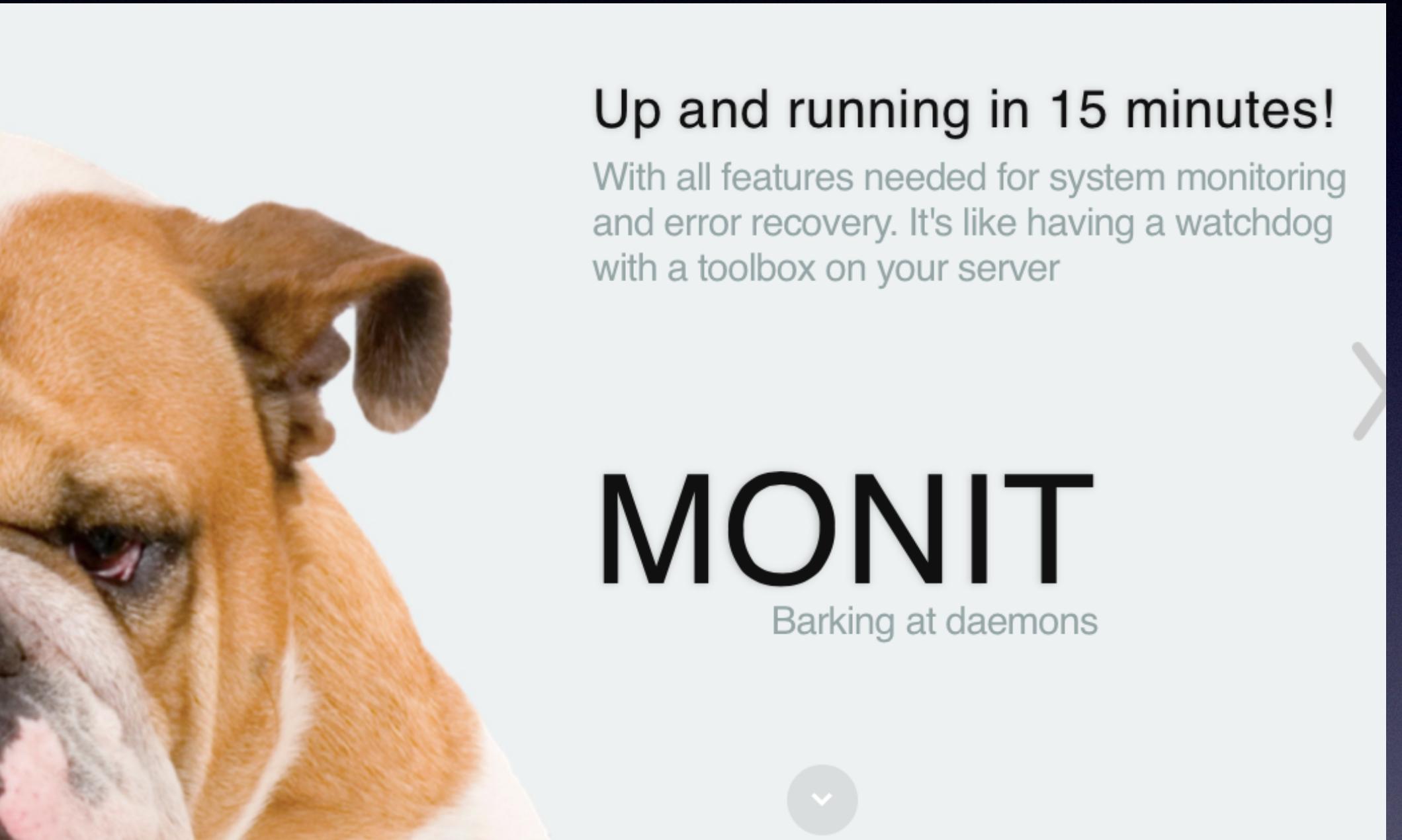
# #3: Internal Monitoring, Monit

- **Why use it?**
  - Free; open source.
  - Very little overhead.
  - Robust configuration options customized to your priorities.
  - List of what it can monitor, at server level, is endless. (existence file/directory. Is ftpd running? Read CPU temperature. Bytes in, bytes out. Disk IO. File permissions)



# #3: Internal Monitoring, Monit

- **What are its limits?**
  - Minimal GUI/Web Interface
  - Requires root access for full feature set
  - (Root required to restart a service)
  - Only as reliable as the server it's on
  - Depends on text based configuration files



# Tool comparison, so far

	Pingdom	Monit
Main features	<ul style="list-style-type: none"><li>• Hosted, 3rd party</li><li>• Monitors site externally</li></ul>	<ul style="list-style-type: none"><li>• Installed on server</li><li>• Monitors site internally</li></ul>
Cost	From \$10/mo	Free
Distinction	Great at alerting WHEN it happens	Great at alerting you BEFORE it happens
Difficulty	Easy	Nerdy
	Pingdom is the “Shopify” of monitoring	Monit is the “Cart Throb” of monitoring

# #4: M/Monit

- **What does it do?**
  - Application software (Mac/Unix/Linux)
  - Not open source, binaries only
  - Installed somewhere external; not your web server.
  - Communicates with your monit *instances*

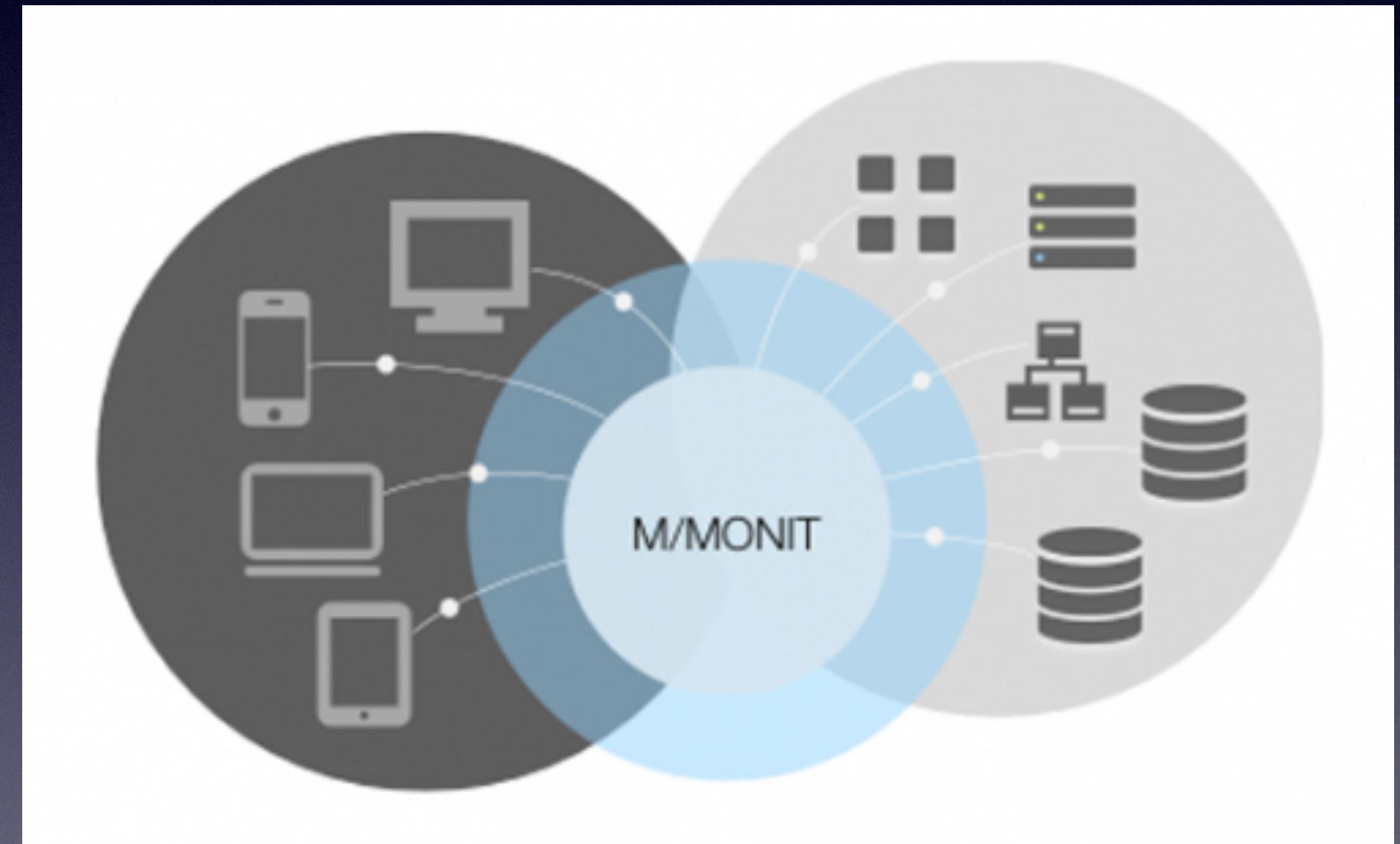
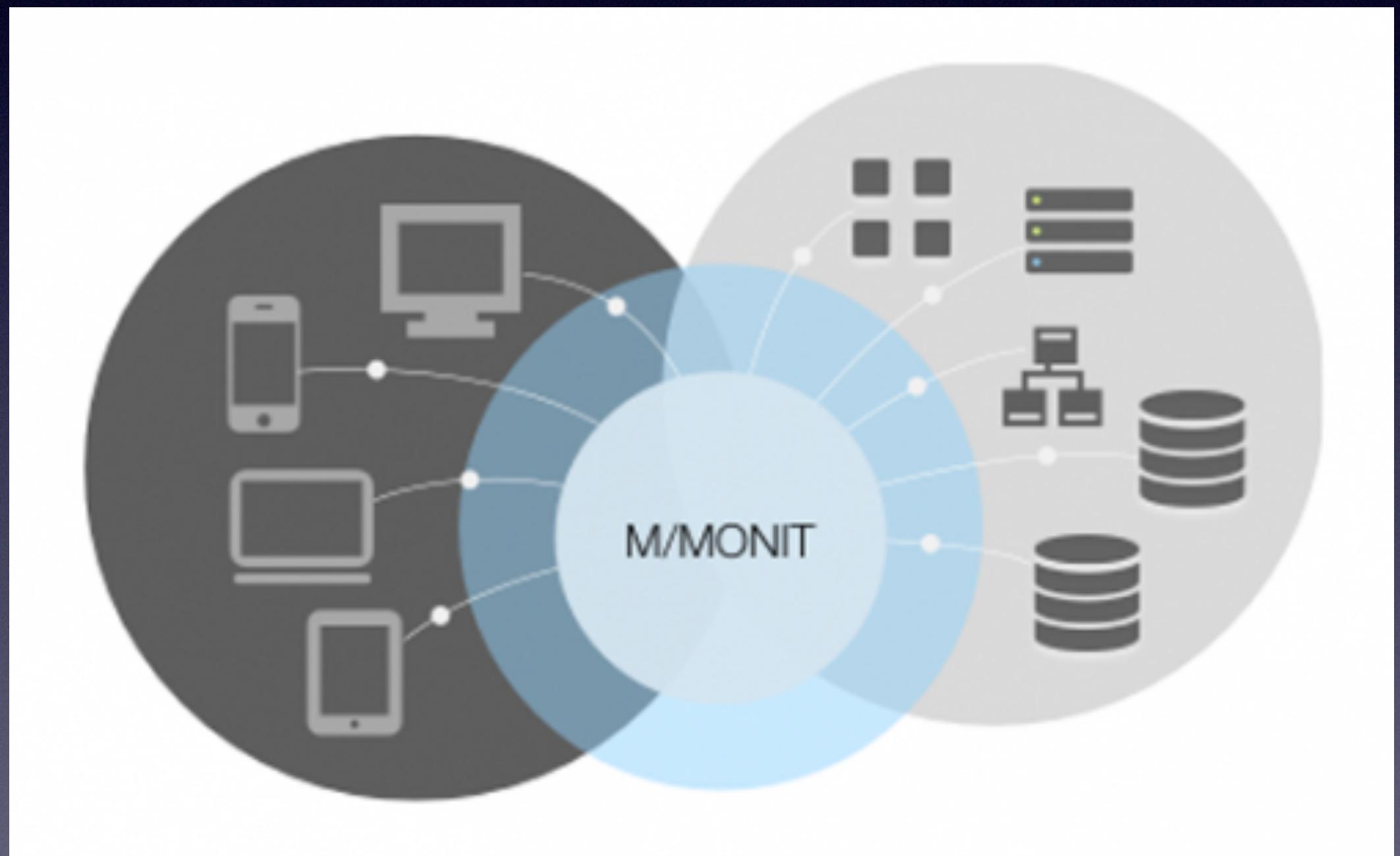


image: <https://www.redeszone.net/2016/10/02/conoce-mmonit-un-completo-software-de-monitorizacion-para-sistemas-linux-y-unix/>

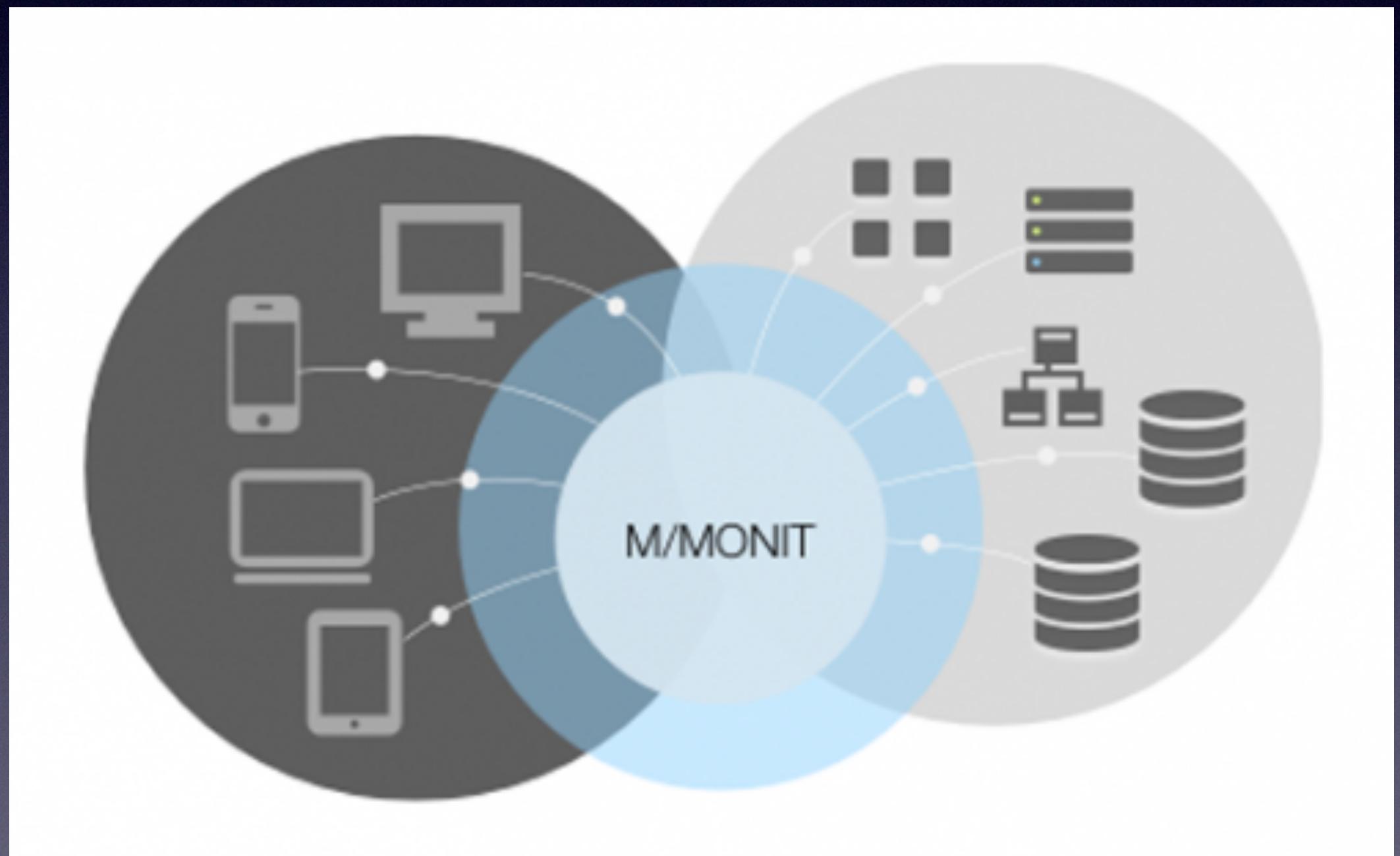
# #4: M/Monit

- Why use it?
  - Levels playing field with Pingdom
  - Provides GUI interface to everything configured by hand in monit
  - No longer a “Developer Only” system



# #4: M/Monit

- **What are its limits?**
  - Only as reliable as the server it's on
  - License key for # of hosts (not domains) you can monitor



# Tool comparison, all methods

	Spreadsheet	Pingdom	Monit	M/Monit
Cost	\$0	From \$10/mo	Free	From \$7/mo
Difficulty	Easy	Easy	Nerdy	Easy <i>and</i> Nerdy
		Alerts when it happens	Alerts before <i>and</i> when it happens	

# Clarifications

- Monitoring and alerting alone aren't bulletproof. Response time and methods are key.
- We still stumble even with these fancy tools.
- In our experience, Pingdom (external monitoring) provides enough for **vendors** to sleep better at night.
- Internal monitoring (Monit) gives **customers** more assurance and confidence.

# Why bother with any of this?

- There's no such thing as a simple site in terms of hosting. HTML-based sites still have multiple potential points of failure.
- Alerts, even when “bad,” provide an opportunity to engage with customers.
- Any stakeholder of a web project will benefit from alerts: dev, designer, SEO, project manager, sales. Why pour yourself into your work only to have it underperform?
- Monitoring is a customer service exercise, not development.
- The main reason to bother with this? .....

“Your website is down!”

>

“Our website is down!”