

The background is a solid blue gradient. Overlaid on this are several thin, white, wavy lines that flow from the left side towards the right, creating a sense of movement and depth. These lines vary in frequency and amplitude, resembling stylized waves or a digital signal.

# AVOIDING DNS PAIN



The background is a solid blue gradient. Overlaid on this are several thin, white, wavy lines that flow from the left side towards the right. These lines are arranged in a way that creates a sense of depth and movement, resembling a stylized wave or a series of overlapping layers. The lines are most concentrated in the lower half of the image, where they also form the text.

AVOIDING DNS PAIN

# ABOUT ME



## Kieran Jacobsen (he/him)

**Twitter/GitHub:** @kjacobsen

**Website:** [poshsecurity.com](https://poshsecurity.com)

**Day Job:** Head of Business Systems at Phocas Software

**Industry Roles:**

- Microsoft MVP for Cloud and Datacenter Management
- GitKraken Ambassador



## Multiple Microsoft services fall offline due to a DNS blooper



BY RYAN — APRIL 1, 2021 — UPDATED: APRIL 1, 2021 ⌚ 2 MINS READ

# It's not DNS

## A DNS outage just took down a large chunk of the internet

Zack Whittaker @zackwhittaker / 2:55 AM GMT+10 • July 23, 2021

Comment

# There's no way it's DNS

# It was DNS

## Slack is down for some people, and of course, the problem is DNS

*If you've been having trouble contacting co-workers, this may be why*

By Mitchell Clark | Updated Sep 30, 2021, 4:18pm EDT

## AWS blames major outage on "automated activity" that triggered "unexpected behavior" in internal network

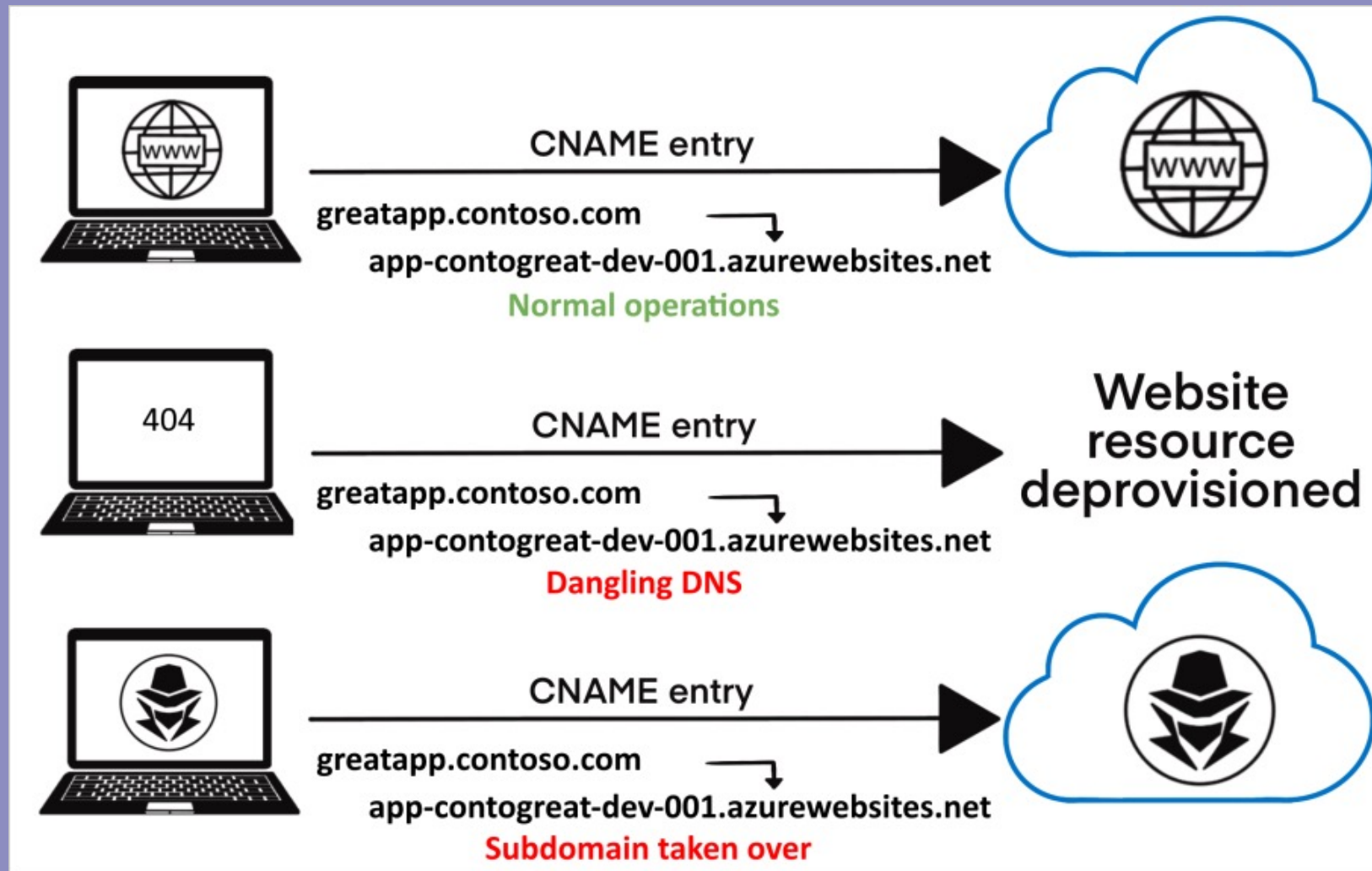
Will make its status page multi-region so that it actually works during outages

December 13, 2021 By: Sebastian Moss Comment

## PSA: Facebook, Instagram, Messenger, and WhatsApp went down for 6+ hours; here's why [U]

Chance Miller - Oct. 4th 2021 1:30 pm PT @ChanceHMiller

# DNS SECURITY CONCERNS





DNS CHANGES CAN BE SLOW



# TRACEABILITY





# DNS AS A CODE WITH DNSCONTROL

- DNSControl
- Developed and supported by Stack Exchange team
- JavaScript based DSL
- Easy to follow syntax
- Comments help describe records

```
1 D('planetpowershell.com', REG_DNSSIMPLE, DnsProvider(DNS_CLOUDFLARE),
2   SPF_BUILDER({
3     label: "@",
4     parts: [
5       'v=spf1',
6       'include:spf.protection.outlook.com', // Office 365
7       '-all' // Servers not compliant with SPF will fail and be rejected
8     ],
9     ttl: one_hour
10  }),
11
12  DMARC_BUILDER({
13    label: "@",
14    policy: 'reject',
15    ttl: one_hour,
16    rua: [
17      'mailto:re+moq8wxdhlmq@dmARC.postmarkapp.com'
18    ]
19  }),
20
21  // Domain uses Office 365 so call the record builder function.
22  Office365Records('planetpowershell.com', 'ms63098003', 'kieran365'),
23
24  CAA_BUILDER({
25    label: '@',
26    iodef: 'mailto:caa@planetpowershell.com',
27    ttl: one_hour
28  })
29
30  // Production Site
31  A('@', ██████████, cloudflare_on),
32  A('www', ██████████, cloudflare_on),
33
34  // Development Site
35  A('dev', '██████████', cloudflare_on),
```



# DNSCONTROL PROCESS

```
79 // Google verification code
80 TXT('@', 'google-site-verification=cOCEohtWpoLaMz8kDb07P1l-_W4MSpJRCQkk7WhiW7Y', one_hour),
81
82 //GitHub Domain Verification
83 TXT('_github-challenge-planetpowershell', '18c69905f7', one_hour),
84
85 // LinuxConf TXT Record
86 TXT('hello', 'Hello LinuxConf!')
87 );
```

GitKraken

File Edit View Help

Workspaces

planetpowershell

DNS x

+

workspace

repository

branch

+

>

DNS

>

LinuxConf

>

Undo Redo Pull Push Branch Stash Pop Terminal Timelines

workspace

repository

branch

+

>

DNS

>

LinuxConf

>

Showing 4/4 Filter (Ctrl + Alt + f)

LOCAL

2/2

LinuxConf

main

REMOTE

2/2

origin

LinuxConf

main

PULL REQUESTS

0

Search pull requests

My Pull Requests

0

Assigned To Me

0

Awaiting My Review

0

All Pull Requests

0

GITHUB ISSUES

Repo: planetpowershell/...

Search filtered issues

All Open Issues

0

My Open Issues

0

TEAMS

Teams in GitKraken allow you to collaborate more effectively with team members and identify merge conflicts before they happen. Teams are included with your subscription and can be created by Admins in the Organization section of Preferences.

TAGS

0/0

SUBMODULES

0

GITHUB ACTIONS

0

Create Pull Request

GitHub GitLab Bitbucket

From Repo

planetpowershell/DNS

To Repo

planetpowershell/DNS

Branch

LinuxConf

Branch

main

Template

pull\_request\_template.md

Title

Add LinuxConf AU Record

Description

\* This template is required. Any request that does not include enough information may be closed at the maintainers' discretion.

\* If you are updating ``dnsconfig.js``, Have you (put an X between the brackets on each line to confirm):

- \* [X] Checked that ``CNAME`` records have the trailing dot as [described here](https://stackexchange.github.io/dnscontrol/why-the-dot).
- \* [x] Checked you have used single quotes.
- \* [X] Confirmed there are no dangling DNS entries.
- \* [X] Confirmed any ``SPF`` changes do not violate the DNS request limits (10 requests).
- \* [ ] Confirmed you haven't checked in any secrets in ``creds.json``.

### Description of the Change

Add TXT record for LinuxConf AU.

Reviewers

Add reviewers...

Assignees

Add assignees...

Labels

Add labels...

Submit as draft

Cancel

Create Pull Request

Continue editing on GitHub

commit: 5c6788

2 days ago

Add TXT record for LinuxConf

Kieran Jacobsen

parent: a812e1

authored 11/1/2022 @ 20:31

1 modified

Path Tree

View all files

dnsconfig.js

6 months ago



# Add TXT record for LinuxConf #1

 Open kjacobsen wants to merge 1 commit into `main` from `LinuxConf` 

 Conversation **0**  Commits **1**  Checks **0**  Files changed **1**



kjacobsen commented 23 hours ago  

## Requirements

- This template is required. Any request that does not include information may be closed at the maintainers' discretion.
- If you are updating `dnsconfig.js`, Have you (put an X between each line to confirm):
  - ☒ Checked that `CNAME` records have the trailing dot as d
  - ☒ Checked you have used single quotes.
  - ☒ Confirmed there are no dangling DNS entries.
  - ☒ Confirmed any `SPF` changes do not violate the DNS r requests).
  - ☒ Confirmed you haven't checked in any secrets in cred

## Description of the Change

Adds TXT Record for Linux Conf

  Add TXT record for LinuxConf



### Review required

At least 1 approving review is required by reviewers with write access. [Learn more.](#)



### Some checks haven't completed yet

1 expected check

[Hide all checks](#)



VSTS: PlanetPowerShell-Infrastructure-Build Expected — Waiting for status to be repor... **Required**



## Run DNSControl Preview



[View raw log](#)



```
1 Starting: Run ***Control Preview
2 =====
3 Task          : Docker
4 Description    : Build, tag, push, or run Docker images, or run a Docker command
5 Version       : 1.194.0
6 Author        : Microsoft Corporation
7 Help          : https://docs.microsoft.com/azure/devops/pipelines/tasks/build/docker
8 =====
9 /usr/bin/docker run --rm -v /home/vsts/work/1/s:/dns stackexchange/dnscontrol dnscontrol preview
10 ***** Domain: ***.com
11 ----- Getting nameservers from: cloudflare
12 ----- *** Provider: cloudflare...
13 1 correction
14 #1: CREATE record: hello TXT 1 Hello LinuxConf!
15 ----- Registrar: dnsimple...
16 0 corrections
17 Done. 1 corrections.
18 Finishing: Run ***Control Preview
```

# #1.0.611 Merge pull request #1 from planetpowershell/LinuxConf

planetpowershell.DNS

Run new

This run is being retained as one of 3 recent runs by

Summary Environments

Triggered by  kjacobsen

Repository and version

planetpowershell/DNS

main ae9c644a

Time started and elapsed

Today at 20:00

1m 42s

Related

0 work items

0 artifacts

Tests and coverage

Get started




+ Add site

Support

English (US)



	TXT	_dmarc	v=DMARC1; p=reject; ...	DNS only	Auto	<a href="#">Edit</a>
	TXT	_github-challenge-p...	18c69905f7	DNS only	1 hr	<a href="#">Edit</a>
	TXT	hello	Hello LinuxConf!	DNS only	Auto	<a href="#">Edit</a>

View 2 changes

Stages Jobs

build

1 job completed

31s

release


1 job completed

39s

txt:hello.planetpowershell.com

Find Problems

txt

Type	Domain Name	TTL	Record
TXT	hello.planetpowershell.com	5 min	"Hello LinuxConf!"
Test		Result	
	DNS Record Published	DNS Record found	

Your DNS hosting provider is "Cloudflare" [Need Bulk Dns Provider Data?](#)

[dns lookup](#)

[smtp diag](#)

[blacklist](#)

[http test](#)

[dns propagation](#)

Reported by [woz.ns.cloudflare.com](#) on 1/12/2022 at 3:06:17 AM (UTC -6), just for you.

[Transcript](#)



# REDUCE DNS COMPLEXITY AND IMPROVE SECURITY

```
1  SPF_BUILDER({
2    label: "@",
3    parts: [
4      "v=spf1",
5      "ip4:198.252.206.0/24", // ny-mail*
6      "ip4:192.111.0.0/24", // co-mail*
7      "include:_spf.google.com", // GSuite
8      "include:spf-basic.fogcreek.com", // Fogbugz
9      "include:450622.spf05.hubspotemail.net",
10     "~all"
11   ],
12   flatten: [
13     "spf-basic.fogcreek.com", // Being deprecated. Low risk if
14     "450622.spf05.hubspotemail.net" // Unlikely to change without
15   ]
16 })
```

```
1  DMARC_BUILDER({
2    policy: 'reject',
3    rua: [
4      'mailto:mailauth-reports@example.com'
5    ]
6  })
```

```
1  CAA_BUILDER({
2    label: "@",
3    iodef: "mailto:test@domain.tld",
4    iodef_critical: true,
5    issue: [
6      "letsencrypt.org",
7      "comodoca.com"
8    ],
9    issuewild: "none"
10 })
```

# DNS PROVIDER RESILIENCE AND MIGRATION

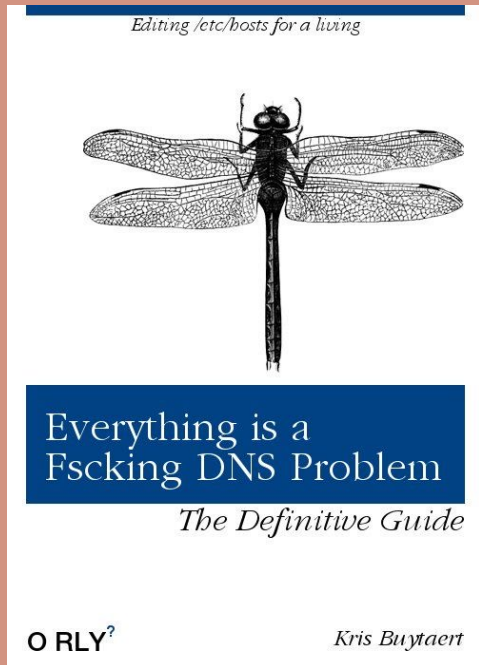
```
1  D('example.com', REG, DnsProvider('R53'), DnsProvider('GCLOUD'),
2      A('@', '1.2.3.4')
3  )
4
5  D('example2.com', REG, DnsProvider('R53',2), DnsProvider('GCLOUD',2),
6      A('@', '1.2.3.4')
7  )
8
9  D('example3.com', REG, DnsProvider('R53'), DnsProvider('GCLOUD',0),
10     A('@', '1.2.3.4')
11 )
```



# USEFUL LINKS

Advice on Mitigating DNS Infrastructure Tampering	<a href="https://poshsecurity.com/blog/advice-on-mitigating-dns-infrastructure-tampering">https://poshsecurity.com/blog/advice-on-mitigating-dns-infrastructure-tampering</a>
DNS Squatting with Azure App Services	<a href="https://poshsecurity.com/blog/dns-squatting-with-azure-app-services">https://poshsecurity.com/blog/dns-squatting-with-azure-app-services</a>
Managing DNS with DNSControl, CloudFlare, DNSimple, GitHub, VSTS, Key Vault, and Docker!	<a href="https://poshsecurity.com/blog/managing-dns-with-dnscontrol-cloudflare-dnsimple-github-vsts-key-vault-and-docker">https://poshsecurity.com/blog/managing-dns-with-dnscontrol-cloudflare-dnsimple-github-vsts-key-vault-and-docker</a>
My DNSControl Accelerator Package	<a href="https://github.com/poshsecurity/DNSControl-Accelerator">https://github.com/poshsecurity/DNSControl-Accelerator</a>
Getting Started With DNSControl	<a href="https://stackexchange.github.io/dnscontrol/getting-started">https://stackexchange.github.io/dnscontrol/getting-started</a>
DNSControl Migration Guide	<a href="https://stackexchange.github.io/dnscontrol/migrating">https://stackexchange.github.io/dnscontrol/migrating</a>
GitKraken (referral)	<a href="https://www.gitkraken.com/invite/qgymoDwa">https://www.gitkraken.com/invite/qgymoDwa</a>

# THANKS



Client: Hello, I want to hear a DNS.joke

Resolver: I personally know nothing, but here is a list of best jokers:

- a.knows.jokes
- b.knows.jokes
- c.knows.jokes

Client: Okay, b.knows.jokes, I want to hear a DNS.joke

b.knows.jokes: I am terrible at joking, as I only know a bunch of people who tell jokes, but here is a guy who once told me a DNS.joke:

- dns.joker

Client: Okay, dns.joker, I want to hear a DNS.joke

dns.joker: I actually just replay jokes from others, go ask dns.jester

Client: Okay, dns.jester, I want to hear a DNS.joke

dns.jester: I actually just replay jokes from others, go ask dns.joker

**Twitter/GitHub:** @kjacobsen

**Website:** poshsecurity.com