



ATLANTA, GA
OCTOBER 11-14

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2021 Fall
Technical Forum
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Operational Transformation

The Dennis Botman Story: A Tale of Next Level ChatOps

Michael Scott Winslow

Senior Director, Software Development & Engineering
Comcast



**VIRTUAL EXPERIENCE
OCTOBER 11-14**



Some Background

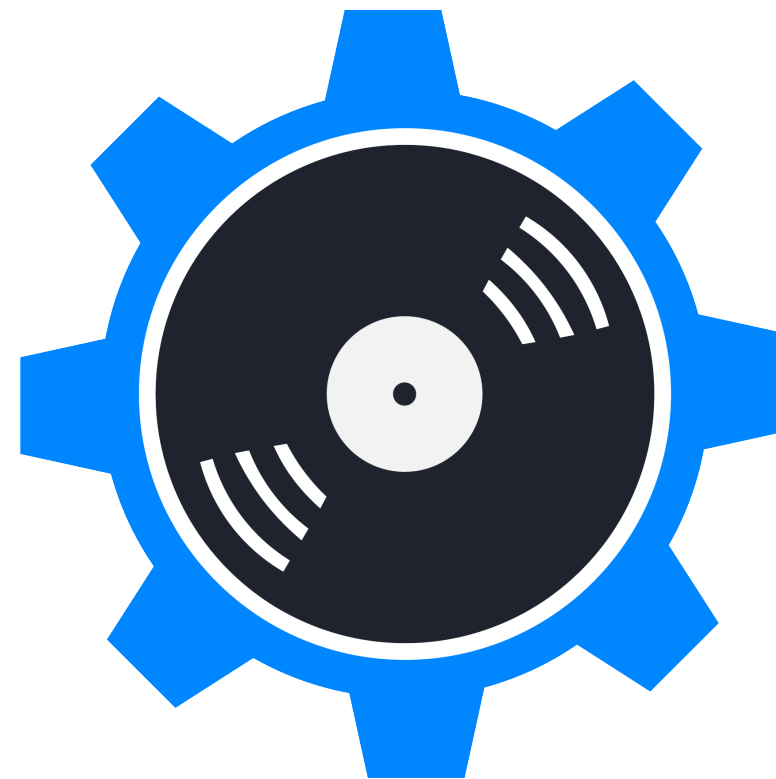


Some Background

VinyIDNS

Comcast's DNS management tool

- Allows millions of DNS entries to be controlled by hundreds of individual groups
- Widely used throughout Comcast
- Open-sourced and is used by the public
- Simplifies DNS administration, but requires some jargon
- We created a Slack channel for real-time support

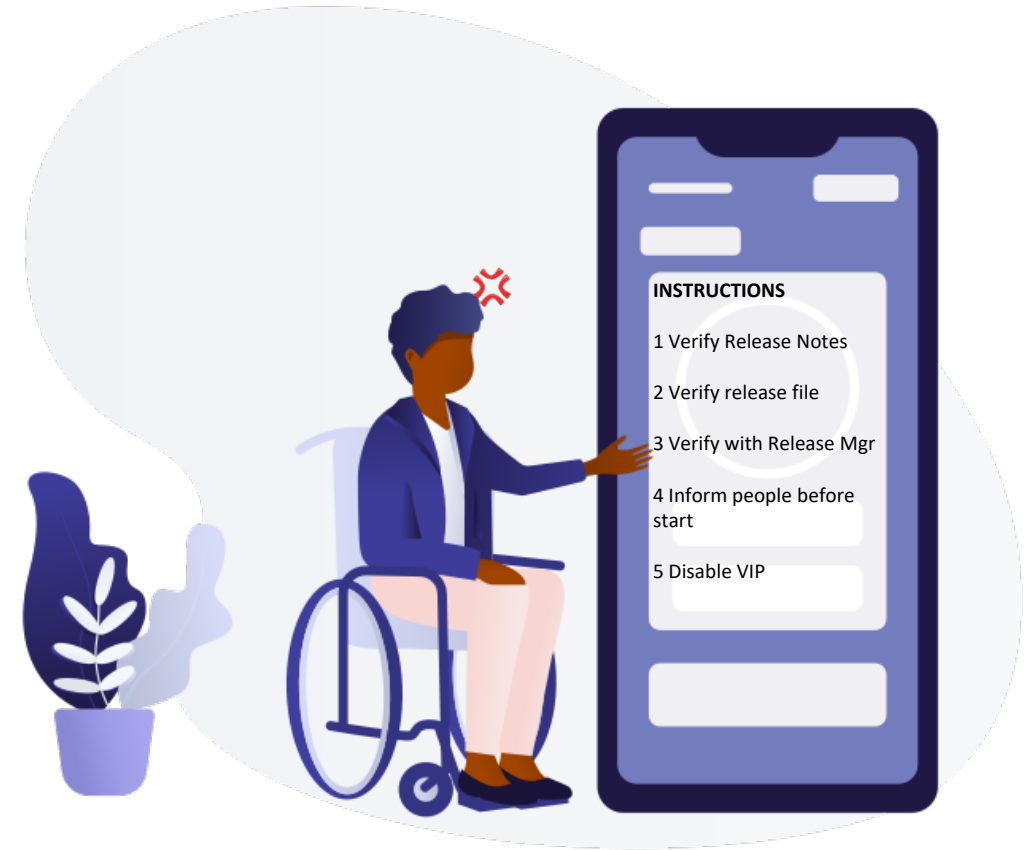


Source: <https://www.vinyldns.io>

Some Background

Reading the Documentation

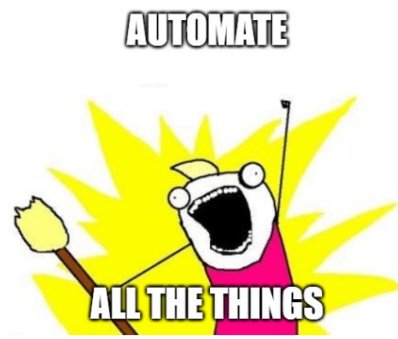
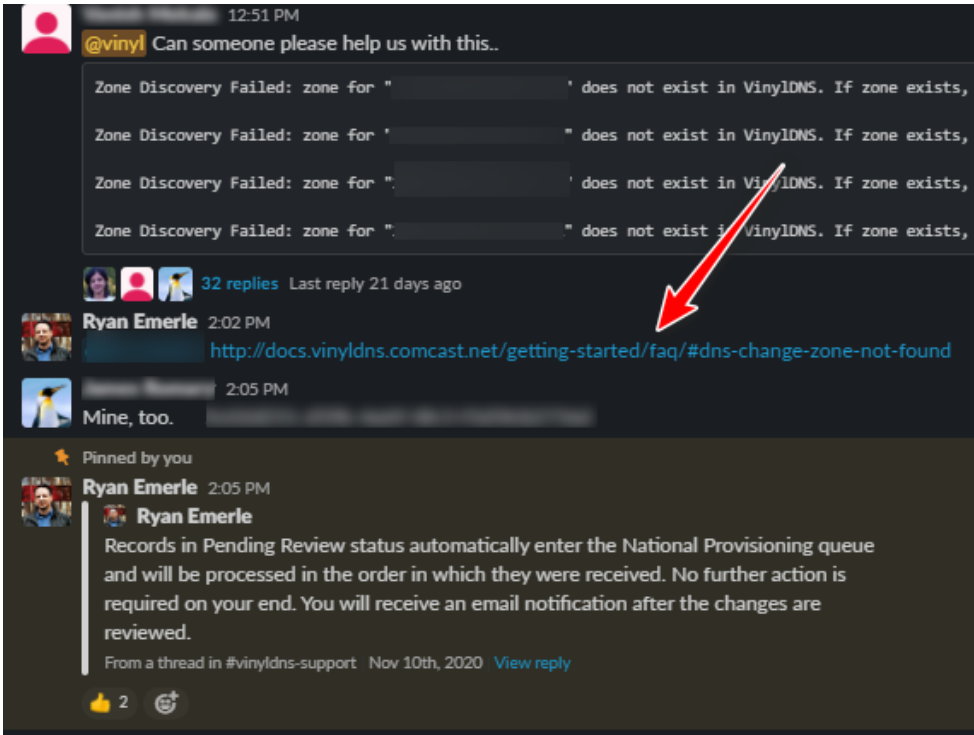
- Users generally don't read the documentation
- Our learning curve is not their problem
- We should provide a service without imposing an undue burden
- Reading tens or hundreds of pages of documentation is unrealistic
- With real-time support, we can shortcut the learning curve



Some Background

Slack Support

- We saw a pattern in support
- We spent a lot of time copying and pasting
- Engineers spent 30%+ of their time searching the FAQs (That's called **TOIL**)
- As engineers, we thought LET'S AUTOMATE!
- It was Dennis Botman time!



Some Background

Is Automation Worth It?

$$ROI_{year} = \frac{(Automation\ Savings_{week} \times 52\ weeks) - Automation\ Cost_{total}}{Automation\ Cost_{total}} \times 100\%$$

$$ROI_{year} = \frac{(9\ hours \times 52\ weeks) - 160\ hours}{160\ hours} \times 100\%$$

$$ROI_{year} = \frac{468\ hours - 160\ hours}{160\ hours} \times 100\%$$

$$ROI_{year} = \frac{308\ hours}{160\ hours} \times 100\%$$

$ROI_{year} \approx 192\%$



Overcoming Inertia

inertia /i'nərSHə/

noun

a tendency to do nothing or to remain unchanged



Overcoming Inertia

Get Started Getting Started

“How do we create a Slack bot that can answer questions?”

- Surely, there is no easy solution
- This is clearly the realm of AI and machine learning!
- We'll need to train an NLP/NLU model!
- We'll need months of research! Cross-team collaboration!

Not Necessarily!

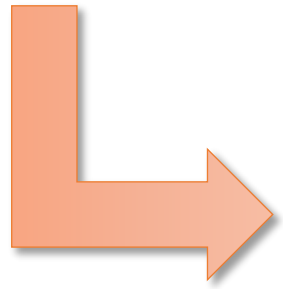


Overcoming Inertia

The Final Product

Thread
Dennis Botman

Ryan Emerle Today at 12:47 PM
@Dennis Botman how do I create a new zone

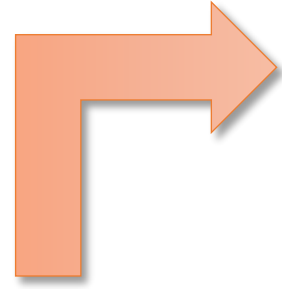


Dennis Botman APP < 1 minute ago

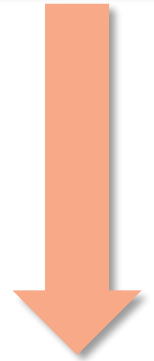
The following questions matched:

- 1 Can I create a zone in VinylDNS?
- 2 How can I create a record with the same name as my zone?
- 3 How do I create a group?
- 4 How can I create my own Slack support bot?
- 5 How do I know my zone ID?
- 6 Zone "XYX" in a shared zone, so owner group ID must be specified for record "ABC".
- 7 How do I delegate a zone out of Comcast DNS?
- 8 How do I convert a shared zone into a private zone?
- 9 Can I migrate a zone in VinylDNS?
- 10 Zone Discovery Failed: zone for "<input>" does not exist in VinylDNS
- 11 How do I connect to my zone?
- 12 I submitted my DNS Change, but it is telling me zone xxx does not exist?
- 13 How do I search zones?
- 14 How do I manage access to DNS zones and records?

Please reply with a corresponding number. Use `back`, `home` or `help` to go back; `cancel` to end.



Ryan Emerle < 1 minute ago
1



Dennis Botman APP < 1 minute ago

To get started with VinylDNS, you must have an existing DNS zone. VinylDNS currently does not create zones, rather it connects to existing zones. Before requesting a new zone in VinylDNS check the `All Zones` tab in the portal at <https://portal.vinyldns.comcast.net/zones> to confirm it doesn't already exist.

Complete the form at <http://vinyldns.natlprov.comcast.net/create/3165>. Be sure to include the VinylDNS group that should own the zone, and the distribution email for the zone in your request.

NOTE: If you are unable to access the National Provisioning Service Desk then [create a request to access](#)

Overcoming Inertia

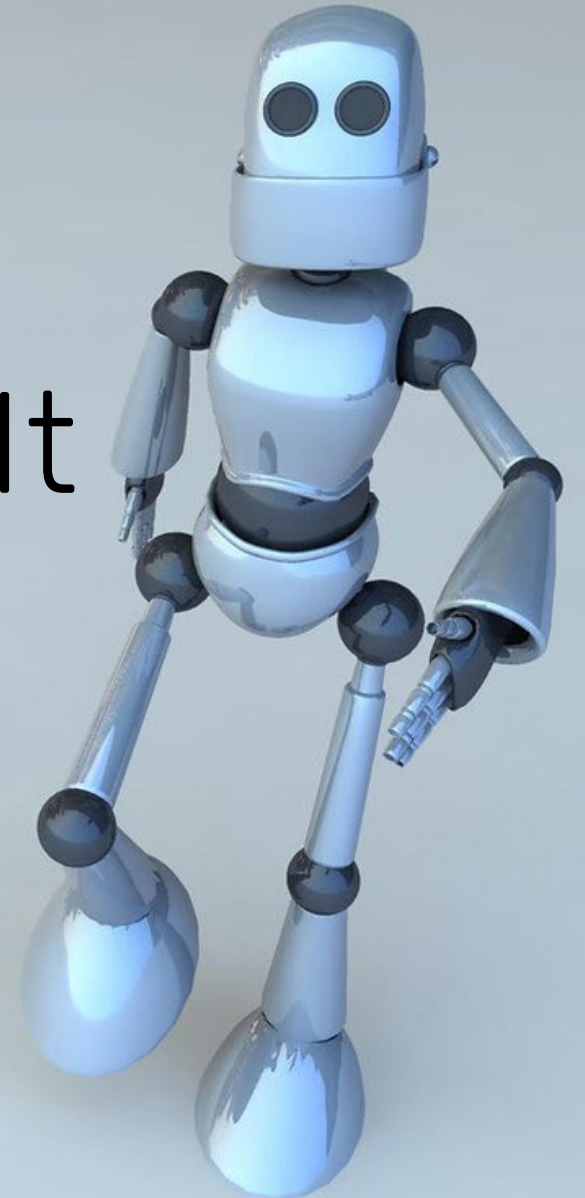
Perfect is the Enemy of Good

- We DID NOT need to create an AI in order to hold a conversation
- We DID need to reduce real-time human support
- Even if our solution is only 30% effective that can equate to hours per week saved, per person
- We did not need more than simple search (at least to start)





Getting People to Use It





Getting People to Use It

The Road Show

Our Conversational Chatbot: Dennis Botman



- Michael Winslow
- Director / SST

 @michaelswinslow
 michaelswinslow



- Ryan Emerle
- Senior Principal Engineer / SST

 @remerle
 remerle

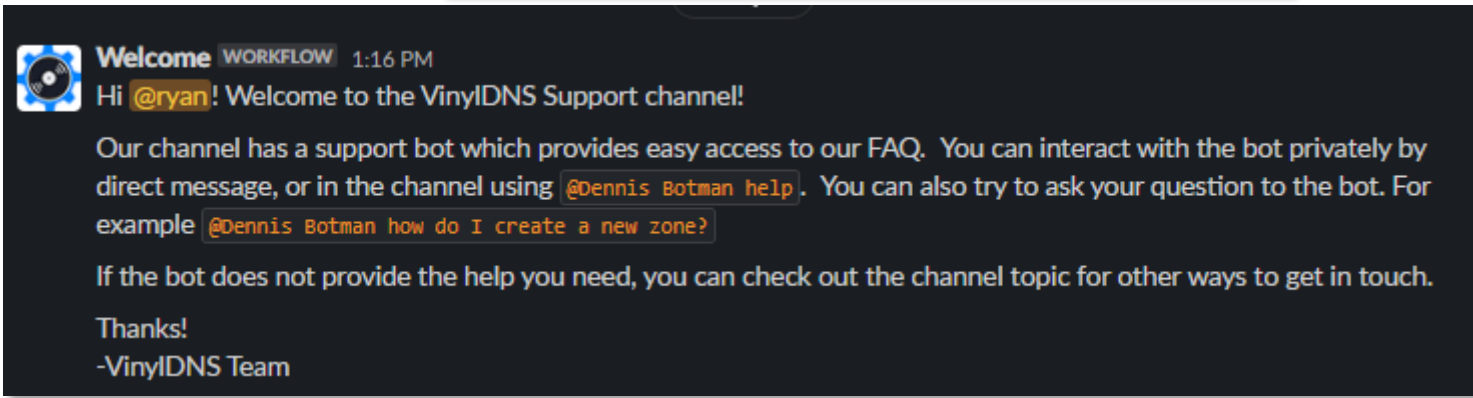
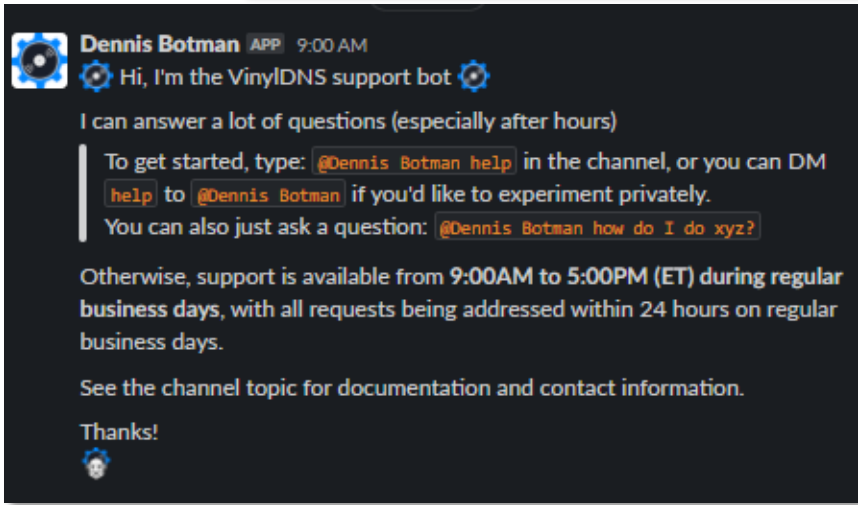
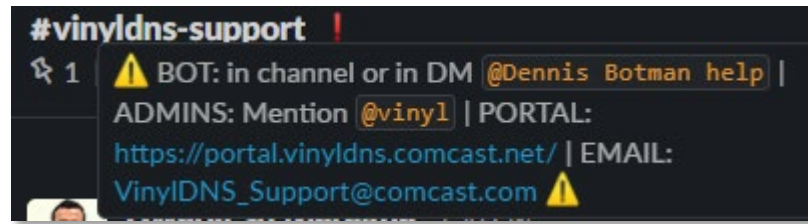


Getting People to Use It

We're Here to Help

Introduced Dennis Botman using "hints"

- Set the channel topic directing users to the bot
- Added a "message of the day" reminder
- Added an "on enter" channel notification

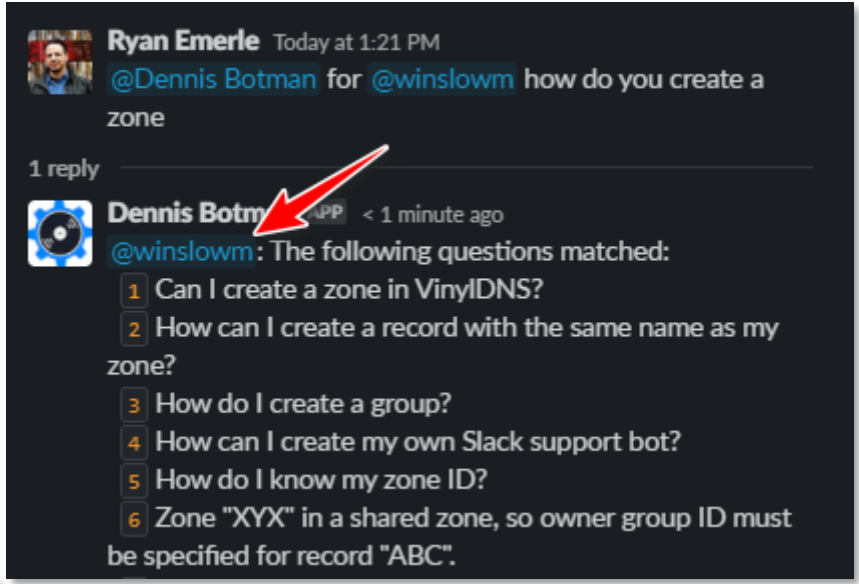
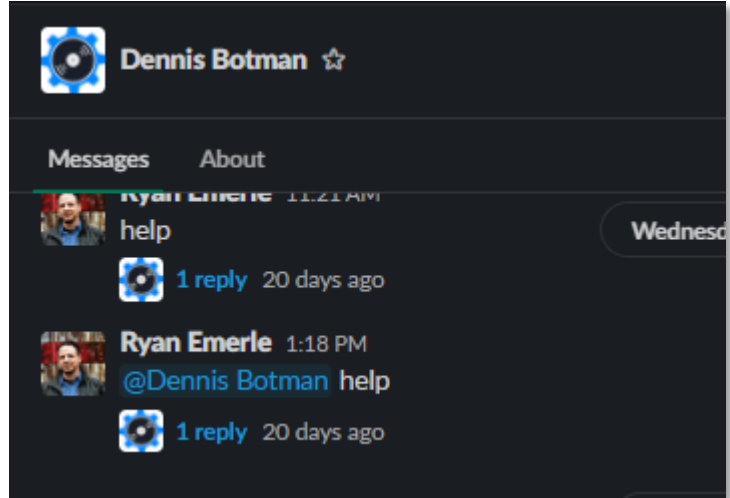


Getting People to Use It

The White Glove Treatment

How else can we promote usage of the bot?

- We added support for our engineers to issue commands on behalf of another user
- We added direct message support (a private session with Dennis)

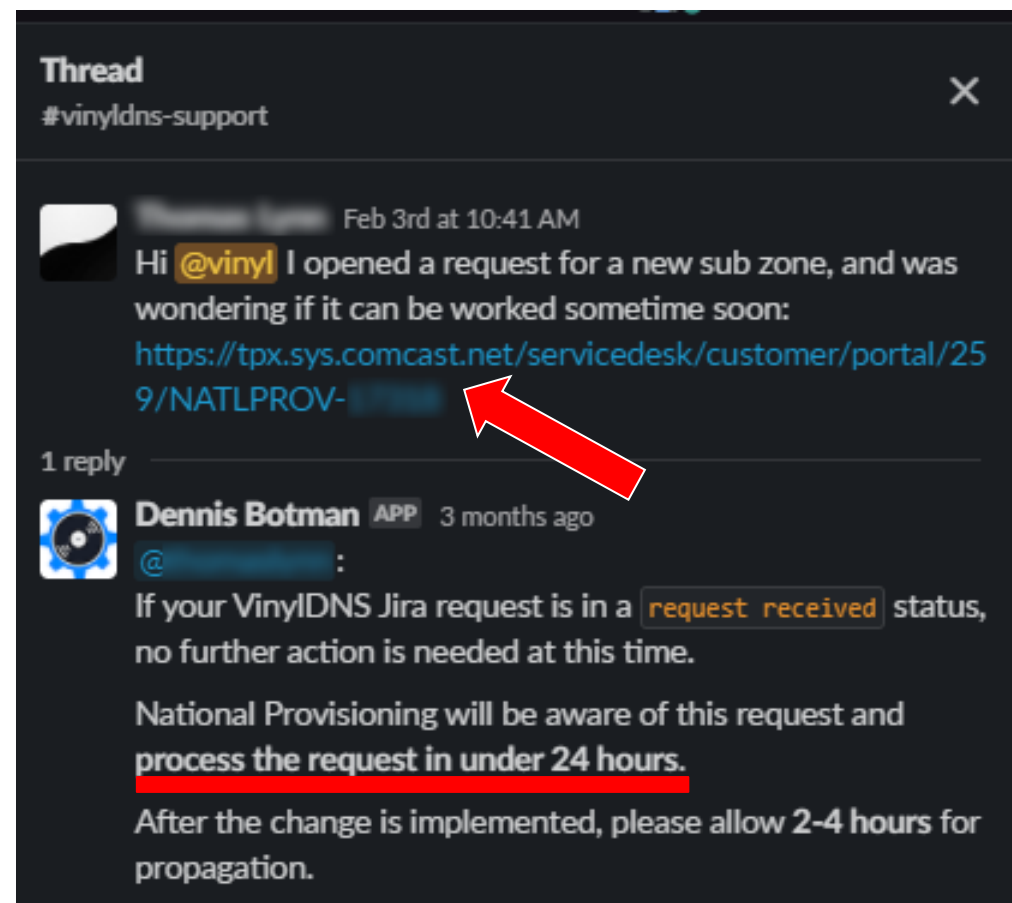


Getting People to Use It

Changing the User's Behaviors

We talked to product managers and stakeholders

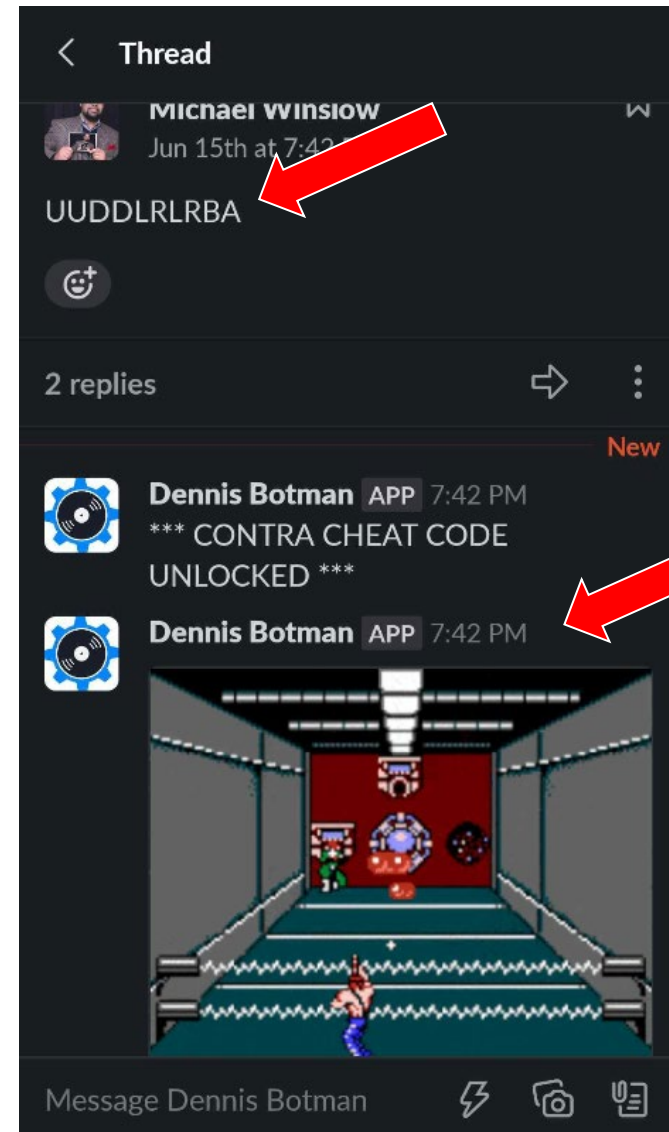
- They disliked PAT (ping-after-ticket)
- We introduced “unsolicited responses”
- This mostly eliminated human interaction



Getting People to Use It

Having Fun! (The Developer Kind)

- Have fun with Easter Eggs!
- Great work for new and young team members
- Make an immediate impact for the team
- We Inner-sourced the project





By the Numbers

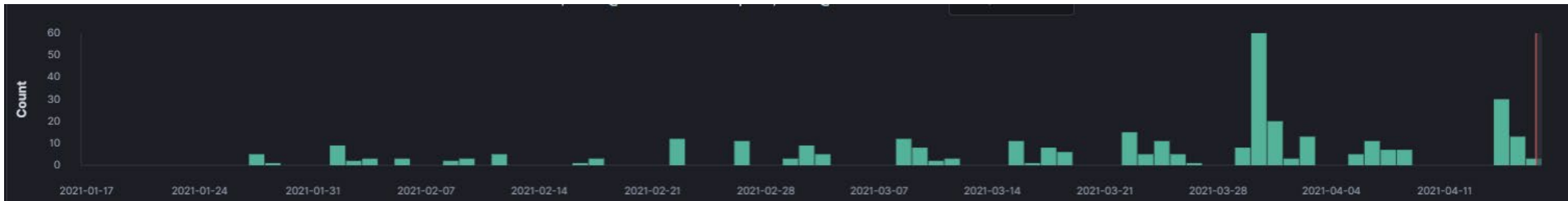
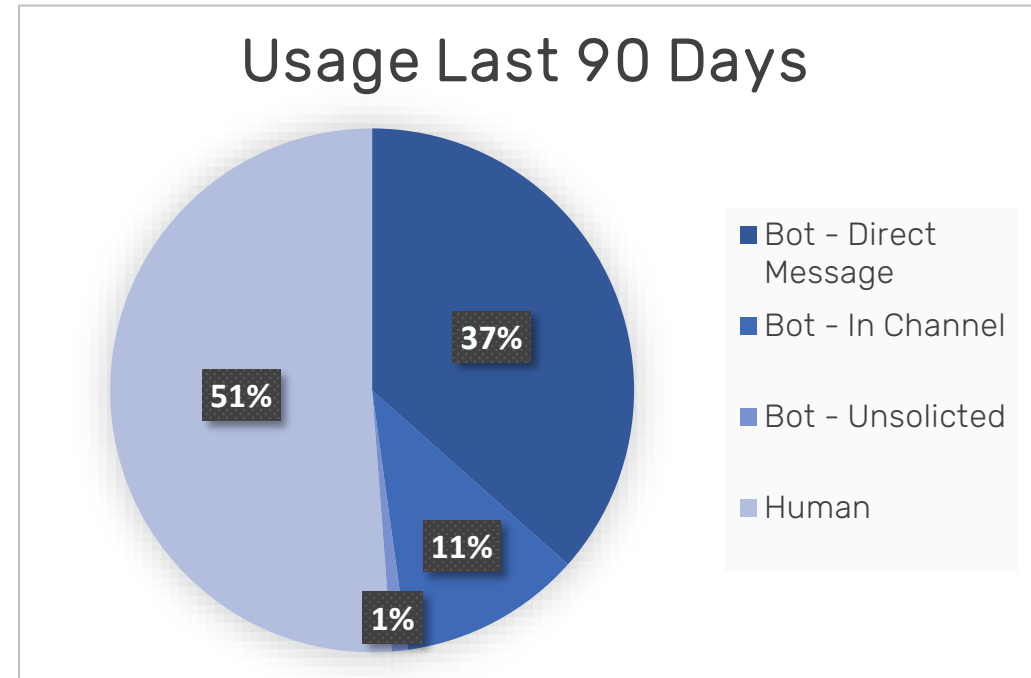


By the Numbers

Remember: our goal is to help users get to answers more quickly
 If only a few people were helped by the bot, that's time saved!

In the past 90 days

- 711 total interactions
- 347 interactions with the bot
- 260 of those were direct messages
- 7 of those were unsolicited





What Did We Learn?





What Did We Learn?

- Start Small and Evolve
- Automation Changes Behavior
- We Are Not Alone



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We Are Not Alone

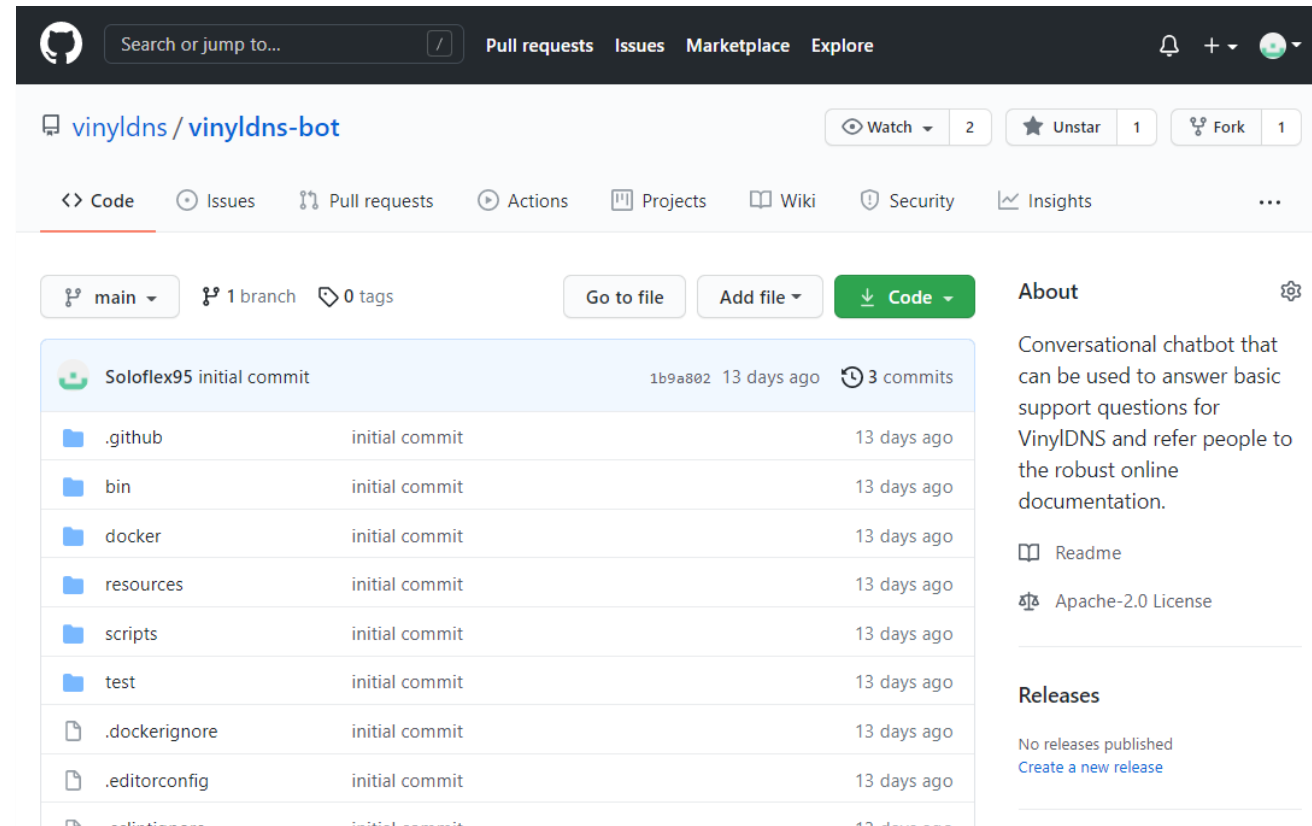
After building the bot and showcasing it, several other groups expressed interest

We had interest from:

- Internal teams
- NBCU
- Sky

This led us to look at open-sourcing the bot framework:

<https://github.com/vinyldns/vinyldns-bot>





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Thank You!

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