

# AUTHENTICATION HELL

A browser-based game built with Ruby · Philly.rb · Mike Dalton

# AGENDA

1. "Authentication Hell"
2. A game?
3. DragonRuby & mruby
4. The game
5. What's next?

**"AUTHENTICATION HELL"**



9:41

5G 78

Tuesday, October 15

9:41

Okta Verify

Verify it's you



A sign-in attempt to Your Work Organization (or "Company Name") was detected. Is this you?

Yes, it's me

No, it's not me





9:41

5G 78

AUTHY



GitHub  
jithub@email.token

123 456



Google  
jangle@email.token

123 456



Amazon  
amazo@email.com

633 427



Discord  
jaccord@email.com

439 014



Authy





9:43

5G 76

< Inboxes

9:43 AM

Okta Verify  
Your One-Time Password (OTP)  
Your temporary password is You Work  
Organization for Nonprofits or + Compan...

Okta  
To: [redacted]

9:43 AM

Your One-Time Password  
(OTP)

Your temporary password is:

**347109**

Please use this code within the next  
10 minutes. Do not share this code  
with anyone.





Safari File Edit View History Bookmarks Window Help

engrusion.com

### Your Work Organization

Username

Password

**Security Key Required.**

Please touch your security key to authenticate.



Forgot your password?

MacBook Pro

**A GAME?**

## CALL FOR SPEAKERS

# RUBYCONF

july 14-16 2026

RubyConf Las Vegas 2026

**event starts**

14 Jul 2026

**event ends**

16 Jul 2026

**location**

Red Rock Casino Resort & Spa  
Las Vegas, Nevada, United States

Call for Speakers

**Call opens at 12:00 AM**

10 Feb 2026

**Call closes at 11:59 PM**

15 Mar 2026

Call closes in **Pacific Daylight Time (UTC-07:00)** timezone.

Closing time in your timezone (America/New\_York) is **16 Mar 2026 2:59 am**.

## "WEIRD RUBY" TRACK

*...A program which absolutely should not exist, yet, defying all reason and good taste, does....And we want you to do it in Ruby.*

**DRAGONRUBY & MRUBY**

# DRAGONRUBY GAME TOOLKIT

- Cross-platform 2D Game Engine
  - Mac, Linux, Windows
  - Steam Deck
  - PS5, Xbox, Nintendo Switch
  - iOS, Android
  - Web (WASM)
- Write your games in Ruby



# DRAGONRUBY

- Custom Ruby runtime
- Based on [mruby](#)
- Subset of Ruby language specification
- No Gem support



# A SIMPLE APP

```
def tick(args)
  args.state.player ||= { x: 100,
                          y: 100,
                          w: 50,
                          h: 50,
                          path: 'sprites/square/green.png' }

  if args.inputs.up
    args.state.player.y += 10
  elsif args.inputs.down
    args.state.player.y -= 10
  end

  if args.inputs.left
    args.state.player.x -= 10
  elsif args.inputs.right
    args.state.player.x += 10
  end

  args.outputs.sprites << args.state.player
end
```

# A SIMPLE APP

▶ Demo ↗

# **THE GAME**

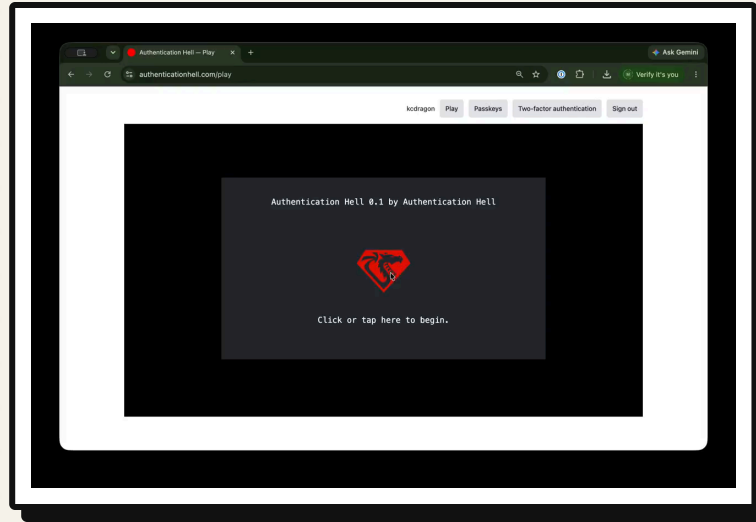
# TECH STACK

- DragonRuby game compiled to WASM
- Embedded inside a Rails 8 app
- Built-in Rails Authentication generator
- `rotpr` and `webauthn` gems

# GAME DEMO


▶ Demo ↗


# PROOF OF CONCEPT



# DISCORD TO THE RESCUE

```
June 8, 2026  
kcdragon 6/8/26, 12:44 AM  
I'm still getting the same error in the Chrome console with the unauthenticated endpoint. I updated the PR with the unauthenticated endpoint. The Rails server does get called and it does return a 200. Maybe I'm not compiling the dragonruby project properly? It seems like something called Module.HEAPU8 is undefined.  
@rails  
(Gem) [username] GET /dragonruby.html-loader  
diff/lock/30413396/014706  
(Gem) [username] http_get /dragonruby.html-loader  
turned: {completed:false, http_response_code:0,  
success_writemem: ,request_totalmem: ,response_me  
sponse_totalmem: ,cancel:false, response_header  
response_data:}  
Uncaught TypeError: Cannot read  
property of undefined (reading 'let')  
at /dragonruby-asm_1611281721  
at /dragonruby-asm_1611281721  
at 132444 (/dragonruby-asm_1611281721)  
at makeFunction (/dragonruby-asm_1611281721)  
at _emscripten_asm_const_int (/dragonruby-asm_1611281721)  
at /dragonruby-asm_1611281721  
at /dragonruby-asm_1611281721  
at /dragonruby-asm_1611281721  
at callUserCallback (/dragonruby-asm_1611281721)  
at onPostamble (/dragonruby-asm_1611281721)  
at Mainloop_runner (/dragonruby-asm_1611281721)  
[1] [1] to turn on code suggestions, ctrl+shift+esc
```

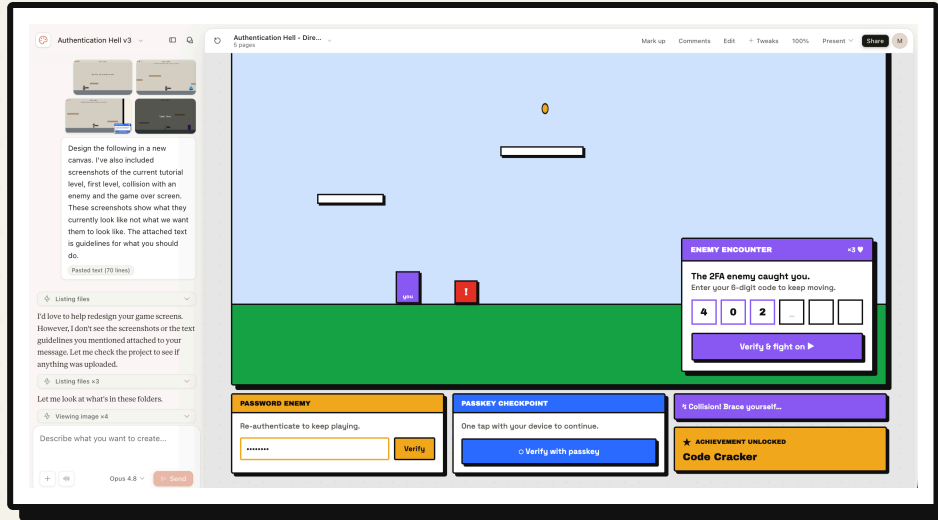
 @kcdragon I'm still getting the same error in the Chrome console with the unauthenticated endpoint. I updated the PR with t...

 **Konnor Rogers** 6/8/26, 12:33 PM  
this is a bug introduced in DragonRuby 7+ it seems

# GAME THEME

- Player stuck in a training video
- Each level is a playlist
- Enemies are authentication

# CLAUDE DESIGN



# AUTHENTICATE IN GAME



# TRIGGER AUTHENTICATION (GAME)

```
def tick(args)
  if args.state.collision_request && args.state.collision_request[:complete]
    args.state.collision_request = nil
    args.state.player.frozen = true
  end

  args.state.collision_request = DR.http_post(
    "http://localhost:3000/games/password/start"
  )

  if args.state.player.frozen
    if !args.state.status_request
      args.state.status_request = DR.http_get("http://localhost:3000/games/password/status")
    elsif args.state.status_request[:complete]
      data = DR.parse_json(args.state.status_request[:response_data])
      if data && data["frozen"] == false
        args.state.player.frozen = false
      end
    end
    args.state.status_request = nil
  end
end
end
end
```

# TRIGGER AUTHENTICATION (WEB)

```
class Games::PasswordChallengeController < ApplicationController
  skip_forgery_protection only: :start

  def start
    Current.session.game_challenges.find_or_create_by!(kind: "password")
    Turbo::StreamsChannel.broadcast_append_to(
      Current.user, :toasts,
      target: "toasts",
      partial: "games/password_challenge",
      locals: { user: Current.user }
    )
    head :no_content
  end

  def status
    render json: { locked: Current.session.game_challenges.exists?(kind: "password") }
  end
end
```

# RESOLVE AUTHENTICATION (WEB)

```
class Games::PasswordChallengeController < ApplicationController
  def complete
    if Current.session.game_challenges.exists?(kind: "password") && Current.user.authenticate(params[:password])
      Current.session.game_challenges.where(kind: "password").delete_all
      render turbo_stream: turbo_stream.remove("toast")
    else
      render turbo_stream: turbo_stream.replace(
        "toast",
        partial: "games/password_challenge",
        locals: { user: Current.user, error: "Invalid password. Try again." }
      )
    end
  end
end
```

# WHAT'S NEXT?

- Improved communication between game and web app
  - Client-side communication instead of HTTP
- More authentication enemies
- Make the game fun

# QUESTIONS OR FEEDBACK?

[authenticationhell.com](https://authenticationhell.com)



[kcdragon/authentication-hell](https://github.com/kcdragon/authentication-hell)

