

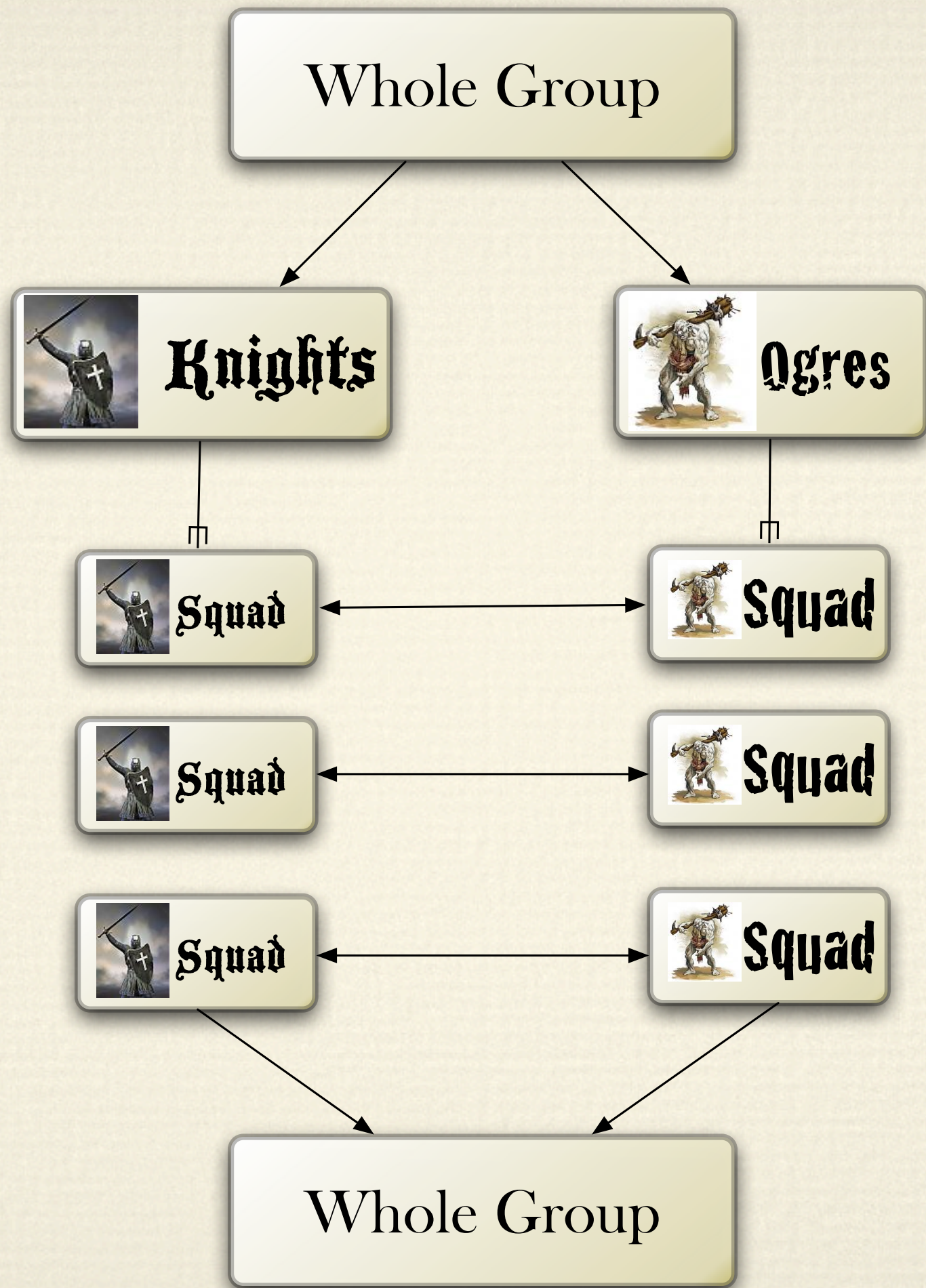
Knights vs Ogres



The Infrastructure Wars

The Game is Afoot

- ❖ Meet the Armies
- ❖ Survey the Battlefield
- ❖ Form Armies and Squadrons
- ❖ Plan For Battle
- ❖ ATTACK!
- ❖ Declare The Victory won by...



A dramatic fantasy landscape featuring a knight in a red cape and armor standing on a rocky cliff. The knight holds a long spear and a yellow flag. The background shows a sunset or sunrise with a bright orange glow, a blue sky with white clouds, and a distant castle on a hill. The overall scene is epic and heroic.

The Knights

Valiant defenders of the castle.

In the game, they will be defending the infrastructure from attack



The Ogres

Nasty. Only want to destroy. Would light their own grandmother on fire and toss her over the wall if it helped make victory more likely.

In the game, they'll be attacking the infrastructure

Think "Internet Troll"

You're rollplaying being a bastard

The idea here is "what if a malicious hacker, or one of our competitors, was trying to break this?" Put yourself in that mindset.

(Technical attacks, not personal attacks.)

Battlefield Survey

Walk through the infrastructure design

(Review handouts or slide presentation goes here)

(Review handouts or slide presentation goes here)

Form Teams



Knights

Ogres

Whole Group



Knights



Ogres

Pick any side you want.

(We need at least 15–20% Knights)

Form Squadrons



compute the number of groups. We want 4–5 players per group.
Divide the number of people in the largest group (knights or ogres) by 4, and round down.
That's the number of teams to form into.

For Knights:
Self-rank who has the most experience with the architecture down one end
Count it off, 1, 2, ... N
(That way you'll end up with 1 expert per team, and 1 beginner per team, etc)

For Ogres: Count Randomly

Planning for Battle

- ❖ Brainstorm to find the weak points
- ❖ Prepare your weapons and defenses

Brainstorm

Physical/
Logical
Components

Actions
and
Attributes

With your teams (Ogres or Knights), you're going to brainstorm 2 lists

Physical/Logical:

- switch
- authentication system

Actions and Attributes:

- crashes
- security
- upgrade
- monitor
- performs

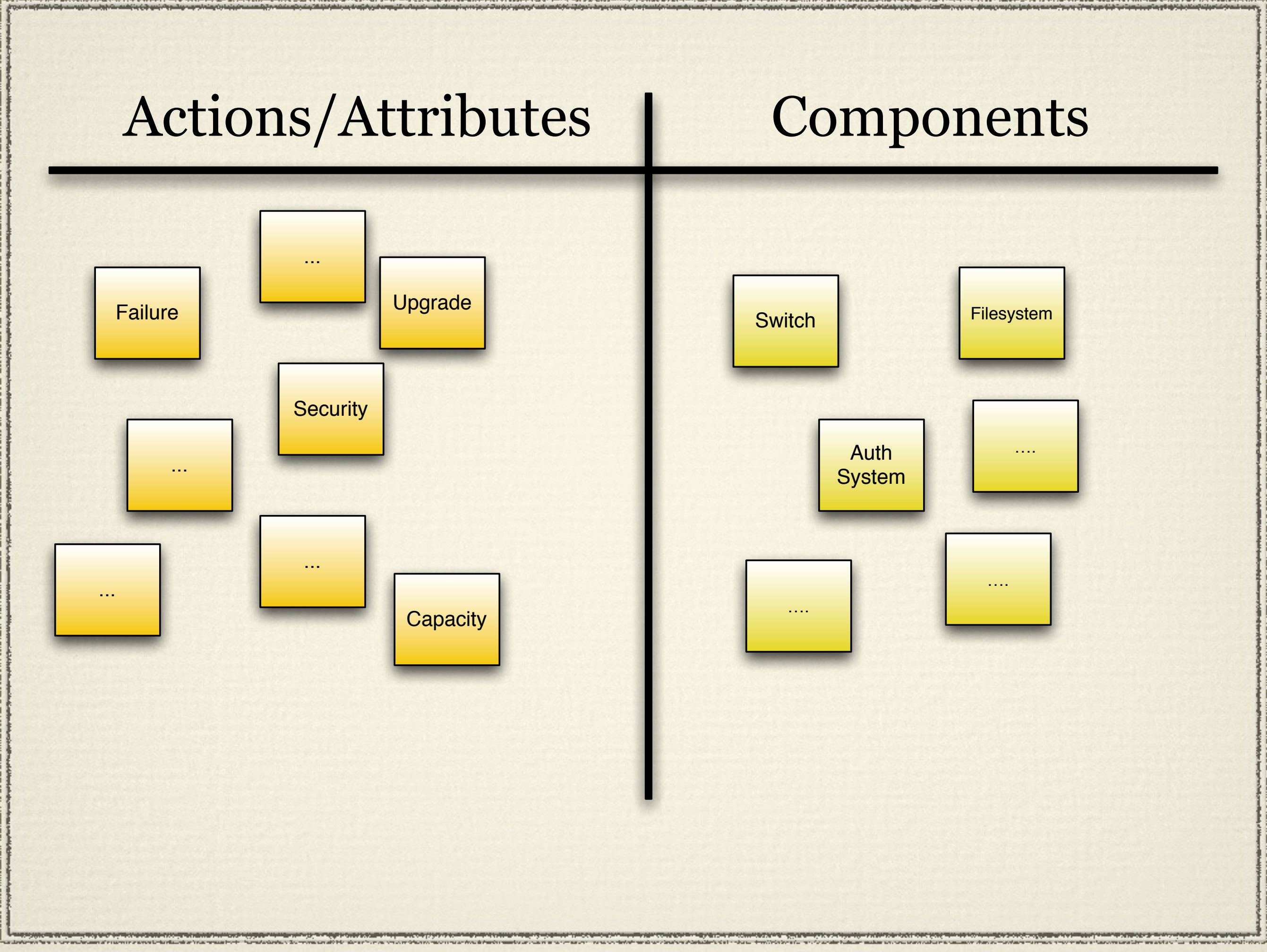
<div><div>↓</div><div>P&L →</div><div>A&A</div></div>	Switch	Authentication System	Filesystem
Capacity			Full FS
Failure			Corrupted FS
Security			Too loose, bad readable files
Upgrade			Triggers fsck

Generate these two lists
Then you can match characteristics and help think of approaches to either attack or defend from

P&L A&A	Switch	Authentica tion System	Frontend Disk									
Upgrade												
Fails												
Security												
Performan ce												

Because there are lots of components and lots of attributes and actions you can come up with

This won't scale well

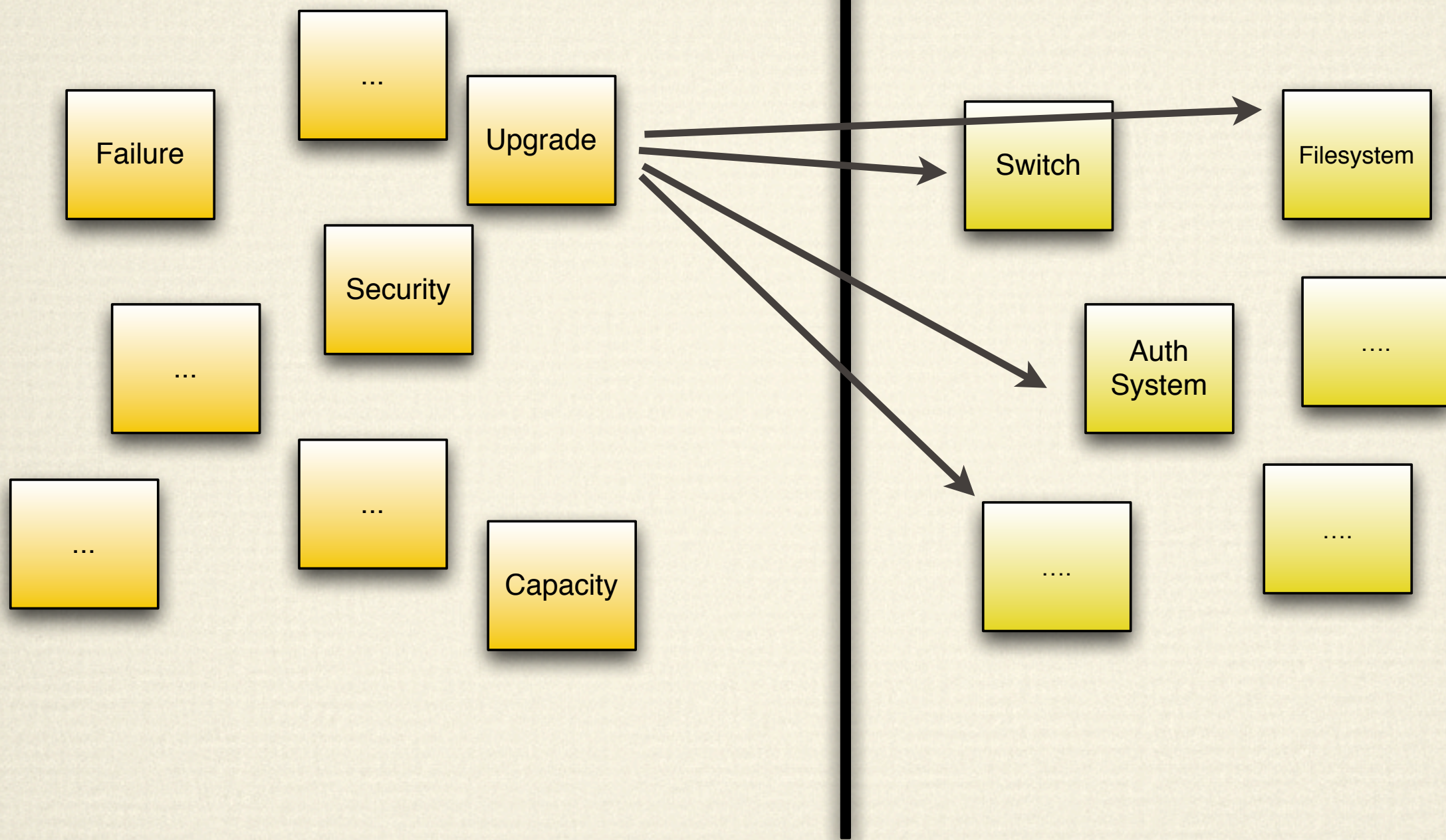


Split the board in half

[components] <-> [actions and attributes]

Actions/Attributes

Components



And then use these ideas to brainstorm your weapons and defenses

For each thing on the left, you can (try) to apply it to the thing on the right. Sometimes it will work, other times it won't make sense.

The important thing is this is a shared wall space between ALL the Ogres. And all the Knights share a wall of their own in a different room.

Weapons and Defenses



Squad



Squad



Squad



Squad



Squad



Squad

Hypothetical Infrastructure



Ogre Attack!

Attack

**Users Impacted:
Expected Times/Year:**

Minutes To Detect: (After Battle)
#ragemode Multiplier:

The ‘Ogre’ team gets these cards.

You just have to fill in the top 2 boxes.

Attack

Hard
Drive
Fails

Users Impacted:
Expected Times/Year:

Minutes To Detect: (After Battle)
#ragemode Multiplier:

So here's the attack. And because we didn't spring for the extra RAID in our mac mini, that's a big problem.

Attack

Hard
Drive
Fails

Users Impacted: 2500
Expected Times/Year:

Minutes To Detect: (After Battle)
#ragemode Multiplier:

So here's the attack. And because we didn't spring for the extra RAID in our mac mini, that's a big problem.

ALL the users go down.

Attack

Hard
Drive
Fails

Users Impacted: 2500
Expected Times/Year: $1/2$

Minutes To Detect: (After Battle)
#ragemode Multiplier:

This can be
fractional
if it happens less
than 1x per year.

And the MTBF on those drives is pretty decent, so we expect this to happen about once every 2 years.

Knight Defense!

Defense

Insert Spare
Drive,
Restore from
Time Machine

Minutes to Repair:



Defense

Insert Spare
Drive,
Restore from
Time Machine

Minutes to Repair: 180

← Hopefully most
repairs are quicker
than this

We're stressing 'repair' here, it probably should be 'recover'
The meaningful amount of minutes is "time to get customers back online."

No Defense?
1 Point to Ogres.
Defended?
1 Point to Knights.

Unanswered cards go off to the side.

Attack

Hard
Drive
Fails

Users Impacted: 2500
Expected Times/Year: 1/2

Minutes To Detect: (After Battle)
#ragemode Multiplier:

Defense

Insert Spare
Drive,
Restore from
Time Machine

Minutes to Repair: 180

So, the last 2 fields get filled in.
They're dependent on specifically the combination of an attack being met by a defense.

Attack

Hard
Drive
Fails

Users Impacted: 2500
Expected Times/Year: 1/2

Minutes To Detect: 5 (After Battle)
#ragemode Multiplier:

Defense

Insert Spare
Drive,
Restore from
Time Machine

Minutes to Repair: 180

In this case, minutes to detect is the nagios polling interval (5)

Attack

Hard
Drive
Fails

Users Impacted: 2500
Expected Times/Year: 1/2

Minutes To Detect: 5 (After Battle)
#ragemode Multiplier: 2.0

Defense

Insert Spare
Drive,
Restore from
Time Machine

Minutes to Repair: 180

#ragemode: 1.0 to 3.0

If you're a customer, and this scenario (time to detect, minutes to repair, and the overall consequences of the repair) happen -- how angry are you?

3.0 is furious, 1.0 is "huh, it happens."

In this case, we'd be down over 3 hours, but had backups w/in an hour? 2.0

Customer- minutes of downtime

That's what we want to track.

Add the minutes, multiply the rest of the numbers.



$$(180 + 5) \times 2.0 \times 1/2 \times 2500 = 462,500 \text{ minutes}$$

It's a simple (and imperfect) number which lets us compare failures against each other.

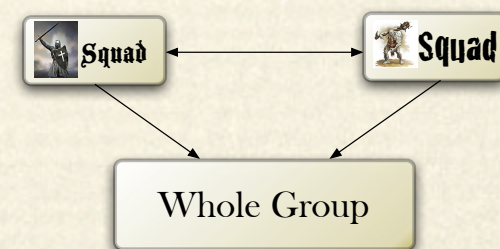
If minutes to repair had been 5, we should have seen only 25,000, obviously better when you compare them side by side. And if the customer impact had been '2', all other things being equal, obviously the 2500 is going to be worse, AND a much bigger number.

Provision Squads

Hand out cards and infrastructure diagrams, and let the game begin!

Game Timeline

- ❖ Brainstorm Components, etc
 - ❖ As Armies, (5 minutes)
- ❖ Create 15+ Attack/Defense Cards
 - ❖ As Squads, (15 minutes)
- ❖ Squad-to-Squad Battle (10 minutes)
- ❖ Tally Points, Declare Victory
- ❖ Solve “Unanswered Cards” (remainder)



For unanswered cards -- take all the ones that weren't answered by defense.
If the problem is actually fixed by the infrastructure, just fill it out.

If it's not, work as an Ogre/Knight unit to figure out a good remediation, and fill that out.