RSAConference2015
Abu Dhabi | 4–5 November | Emirates Palace

SESSION ID: SPO-W10A

Lie, Cheat and Deceive: Change the Rules of Cyber Defense

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Why continue to do things the way we always have?

- Imagine:
  - Within every aspect of our lives there are rules, legal and moral guidelines that must be followed
  - These tell us what actions are permissible, what responses are appropriate, in short every element of our behaviour
  - Sport clearly illustrate this
    - ~~Football~~, sorry Soccer – 11 people per team, rules govern the time they play, how they play, where they play, each role has it's own set of behavioural rules
  - **Do you really have to follow a set of rules for Cybersecurity?**

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USA vs Scotland Match?

INVOTAS

USA vs Scotland Match?

So How Do Attackers See Us?

- We are bloated, slow, overworked, underpaid, stressed
  - We are guided by the wrong people
    - Users: “it's too complicated and it doesn’t have a fruit logo on it”
    - Auditor: “Get someone else to do it, and have you documented it?”
    - Procurement: “Choose the lowest bidder”
    - Board: “I don’t understand, why are we doing it?”
- Attackers see us as static, easy to locate, easy to invade, always up, and there’s plenty of people on the inside to rely on for help ☺

The Wrong Mind-set?

- We start with a mindset of losing:
  - The attacker only needs 1 vulnerability while the defender has to defend everything
  - The attacker has infinite time and infinite resources
- We forget that the attacker has to do “abnormal” things
  - Create ***unusual*** traffic
  - Create ***failures***
- Why don’t we catch them in time?

Practice the Art of Deception to Better Defend

- Be less predictable, Be faster, Be more aggressive
  - Lie
  - Cheat
  - Deceive

Change the Game.

Lie – Attackers don't tell the whole truth!

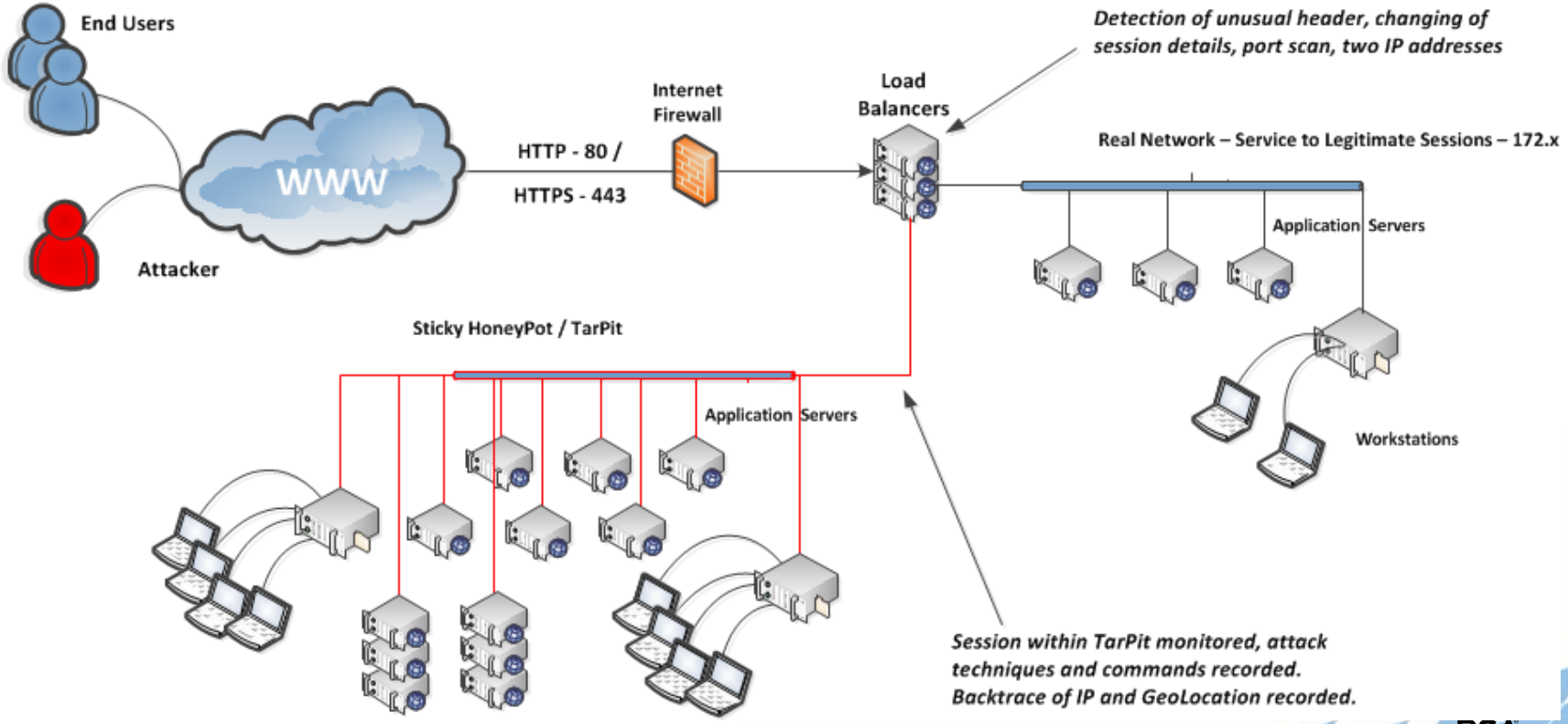
- Attackers falsify browser headers, spoof IP addresses, use other people's machines in order to present a false front

Data	SESSION	ip=23.34.161.51&referrer=http://www.domain58989.com&lang=EN&OS=win32&userAgent=Mozilla/5.0 (LINUX; U; Redhat 9.2; en-US; rv:1.8.1.11) Gecko/20080423 Firefox/2.0.0.11

2012-01-04 10:00:26.189	00:00:00.000	23.34.161.51	home
2012-01-04 10:00:33.800	00:00:07.611	23.34.161.51	product_category/cell_phones
2012-01-04 10:00:51.960	00:00:18.160	23.34.161.51	login
2012-01-04 10:00:58.883	00:00:06.923	23.34.161.51	login-incorrect-password
2012-01-04 10:01:12.306	00:00:13.423	23.34.161.51	login-done
2012-01-04 10:01:13.159	00:00:00.853	86.105.1.148	product_display/dvd_players
2012-01-04 10:01:13.722	00:00:00.563	86.105.1.148	add_to_cart

Data	SESSION	ip=86.105.1.148&referrer=http://www.badguysrus.com&lang=RU&OS=Linux&userAgent=Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 6.0; SLCC1; .NET CLR 2.0.50727; Media Center PC 5.0; .NET CLR 3.0.04506; InfoPath.2)

Lie – So Why Should We ?



Cheat – There's A Whole Army Against You

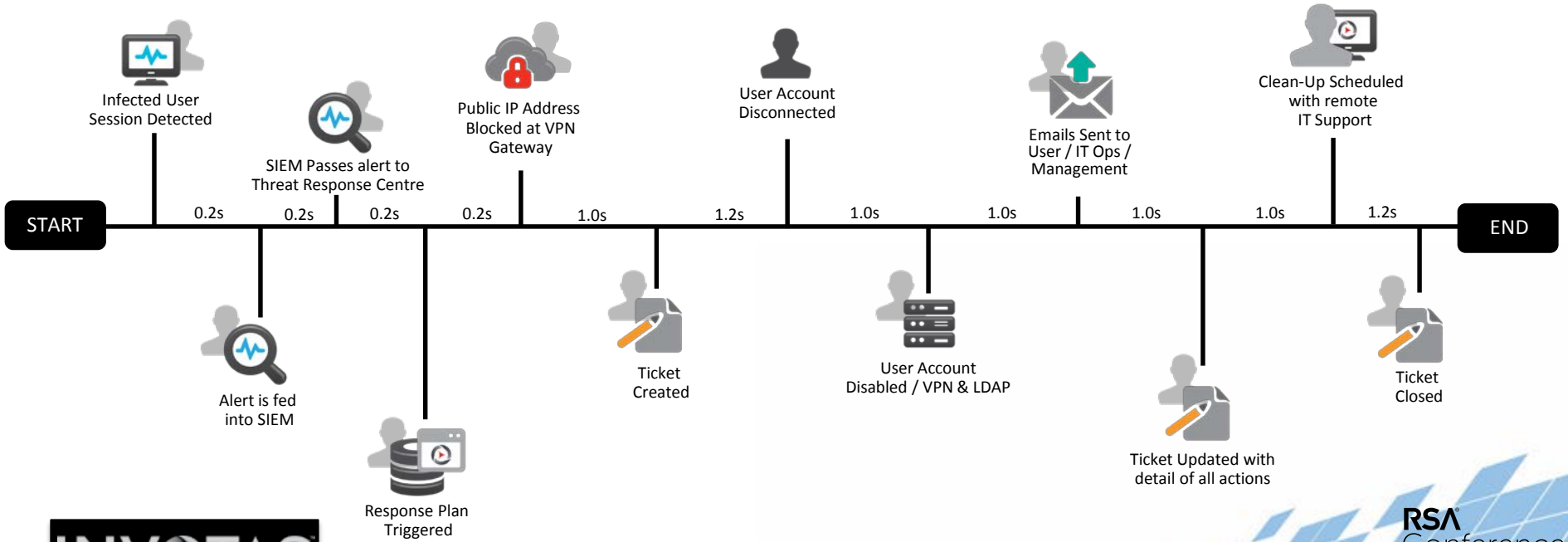
- Botnet armies give them superior power
  - Zeus EuroGrabber – Stole $47million from 30,000 customers through mobile devices
  - ZeroAccess Botnet Network globally an estimated 1,000,000 devices
    - Mining bitcoin and other banking credentials, its estimated it generates $100,000 per day for its operators

ZeroAccess Botnet Network (Europe)

Image source – TechnologyReview.com

Cheat – Multiply Forces, Coordinate Response

- Automate defensive capabilities internally, so you now have an army of analysts battling for you:



Deceive – Spear Phishing Attack (Infiltration)

Inquiry Spam x

wncky18 <wncky18@yeah.net> 3 Apr (6 days ago)
to dirksoutdoors, me, goratktrading, azimut.pattaya, annemuturi, info, kazancompr, vijayakumarm06, mvijaykumar, felipetornos, bestservice4ch., stephen.leavell, myexamsupport, gramexflexo, variant.kharkov, GOA_1_rashed

Why is this message in Spam? It's similar to messages that have been detected by our spam filters. Learn more

Dear CEO,
Good afternoon from China.
We need 51000 pic of shaft used in oil filed,the material is s45c.Please see the attachment about more information.After you check it and if you can provide it for us please send us quotation .If we think the price is the best (including VAT),we can sign a contract with you and then prepay 30% of the total.You will have 12 months to finish the produce process.
Hoping that you can reply as soon as possible so that we can have a long time cooperation relationship.

Best regards
TianZhongqing
Chengdu Cheng kang yuan Trade Co.Led
NO.3 xiao nan street Qing YangQu Chengdu China pc610000
Tel;+86 2868308756
Fax;+86 2868308745
Cell:+86 18382238901
Email;wncky18@yeah.net

图纸.jpg

Deceive – Ever Played 3 Cups ?

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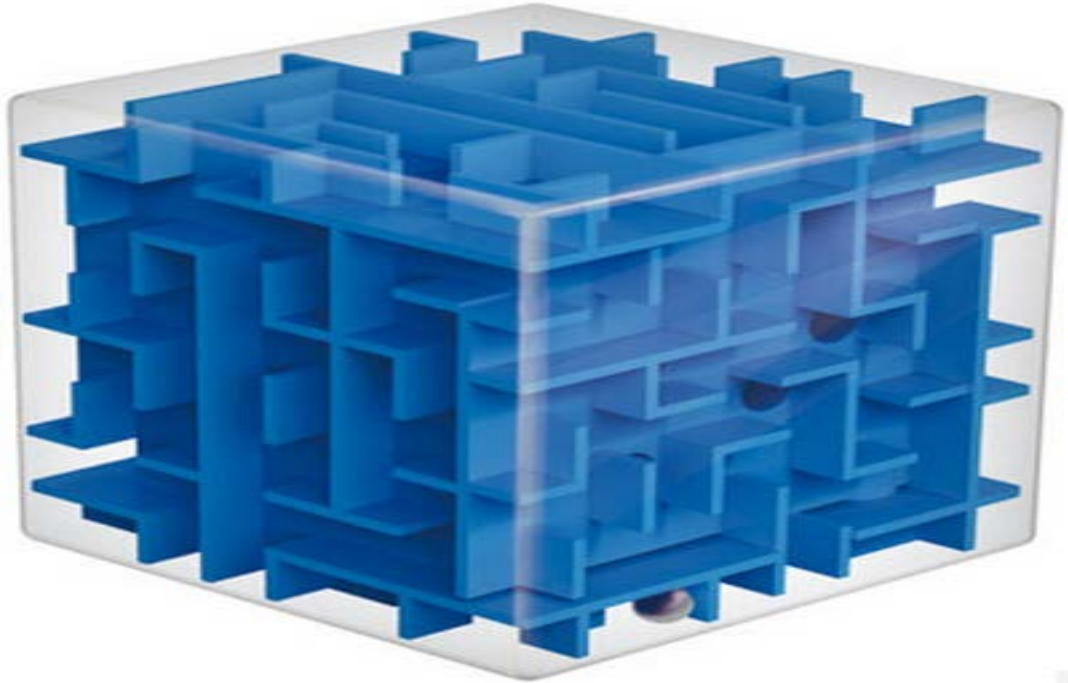
Deceive – Ever Played 3 Cups ?

Ever Played when there is no winning cup?

Deceive – Today's 3 Cup: Maze



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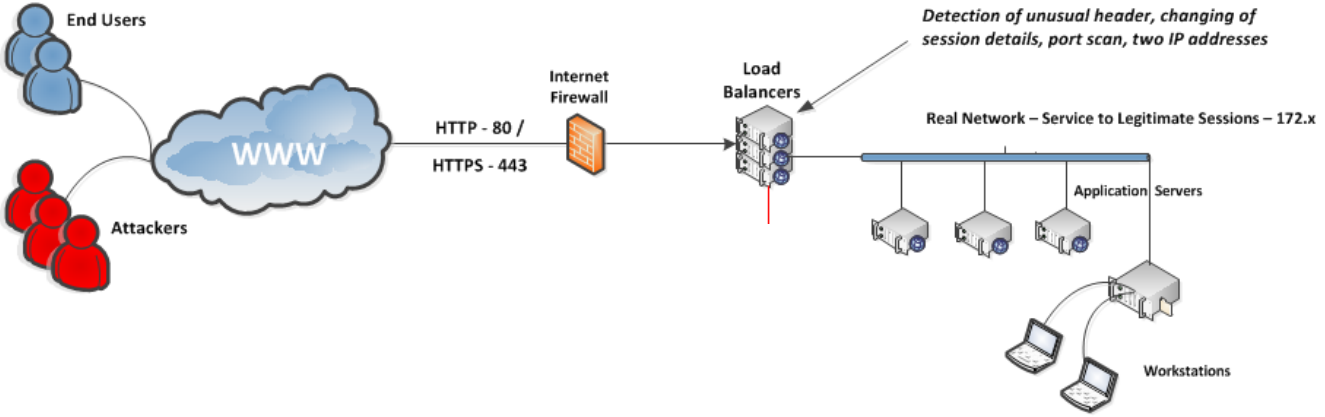
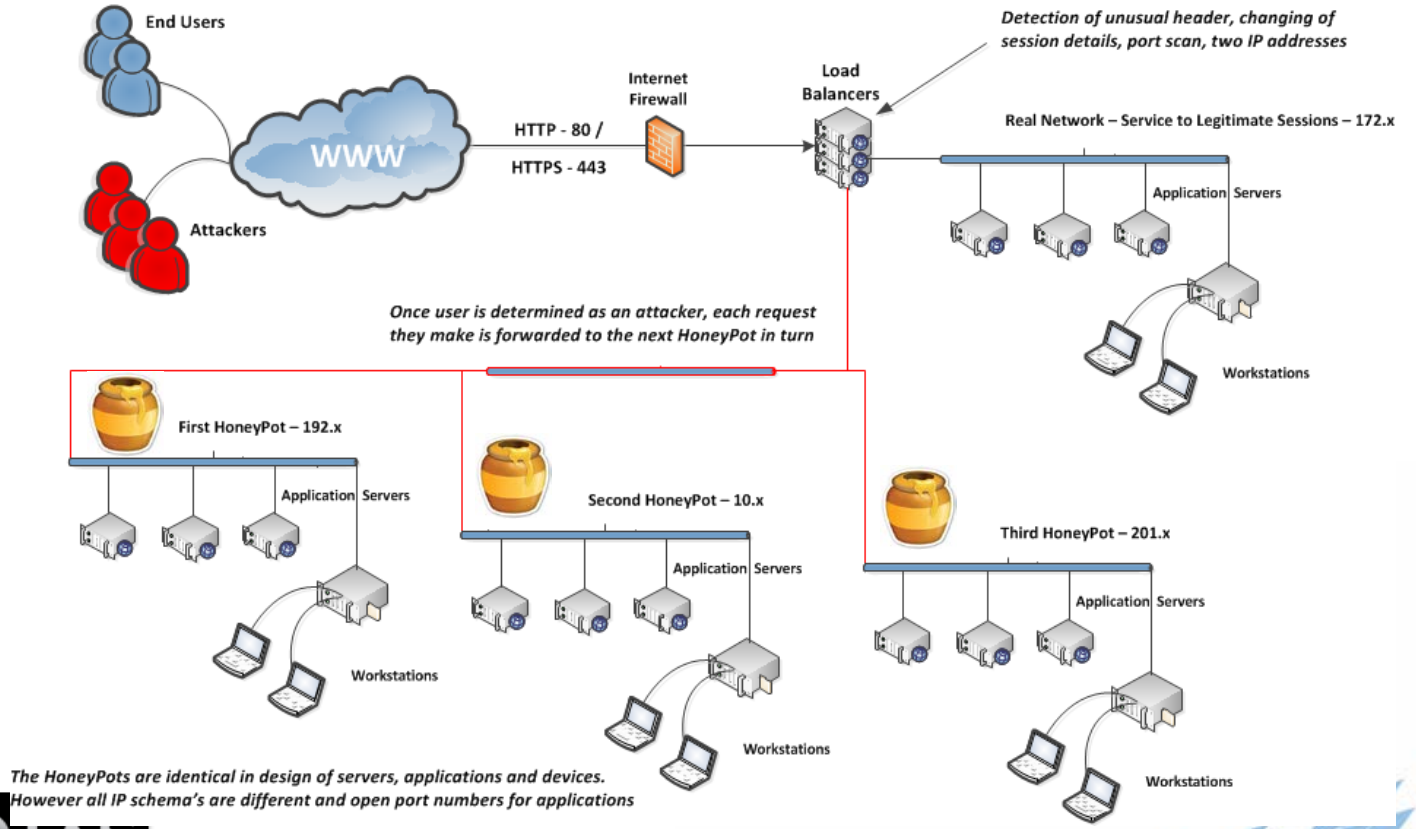
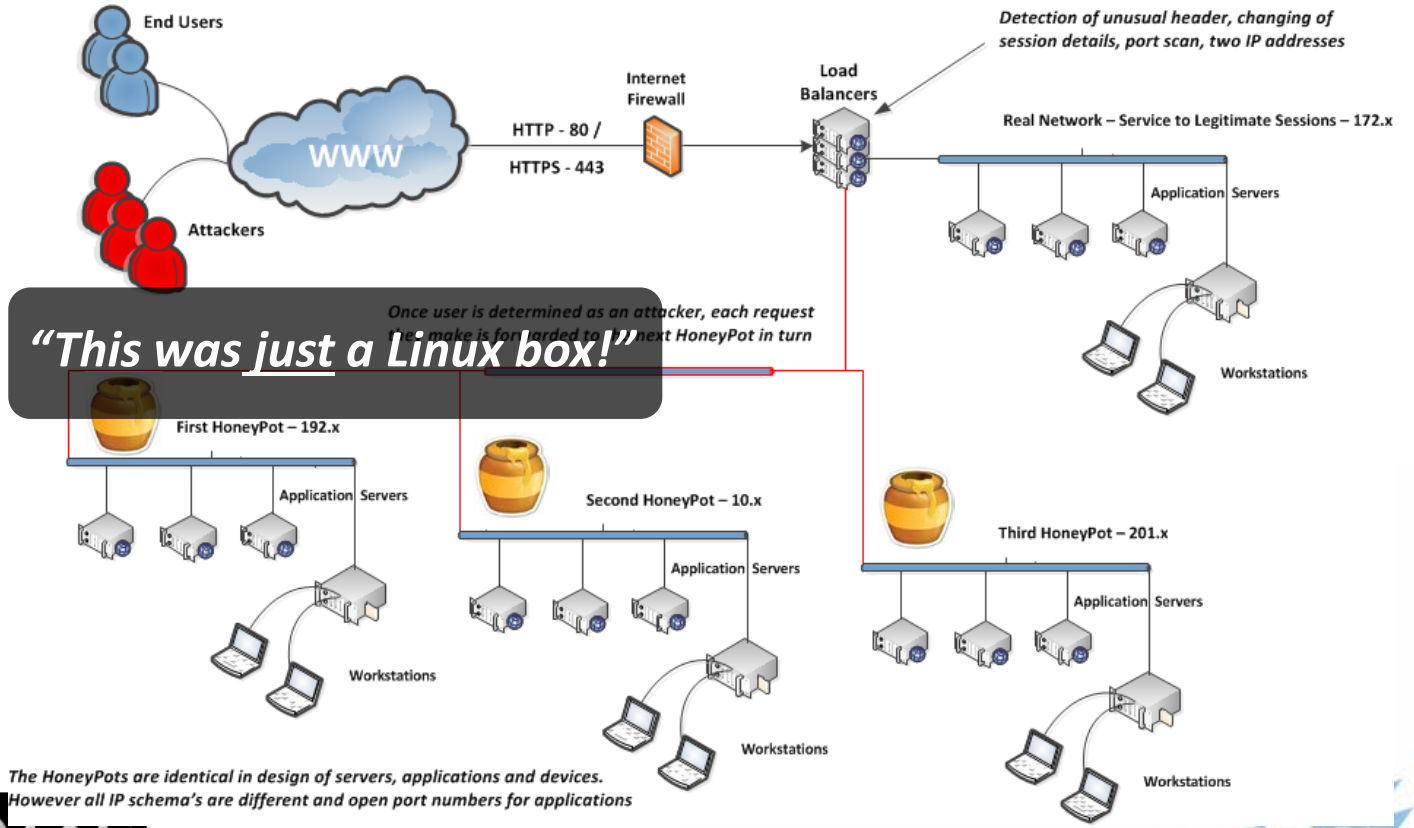
Deceive – Three Way Honeypot



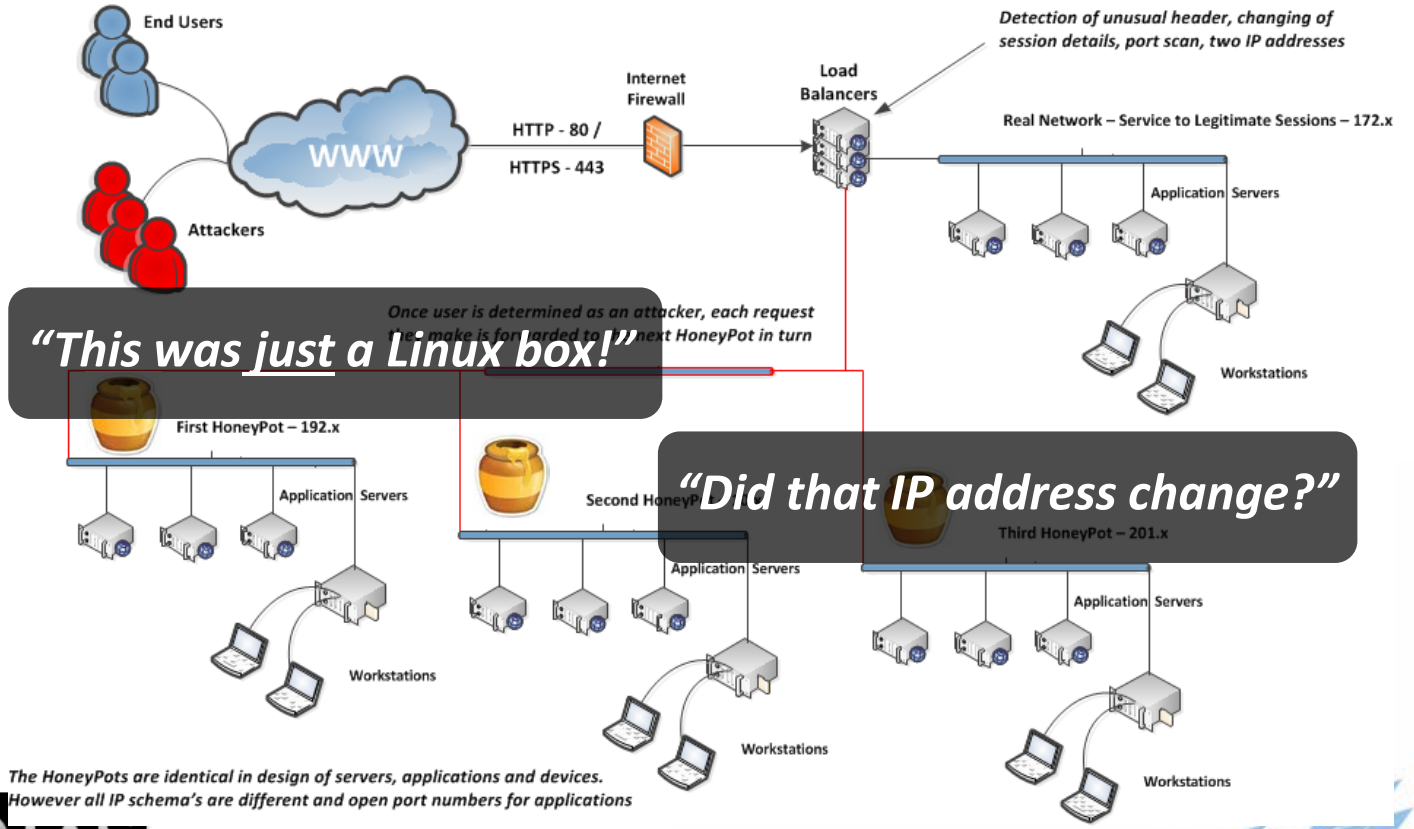
Deceive – Change the Battle Field



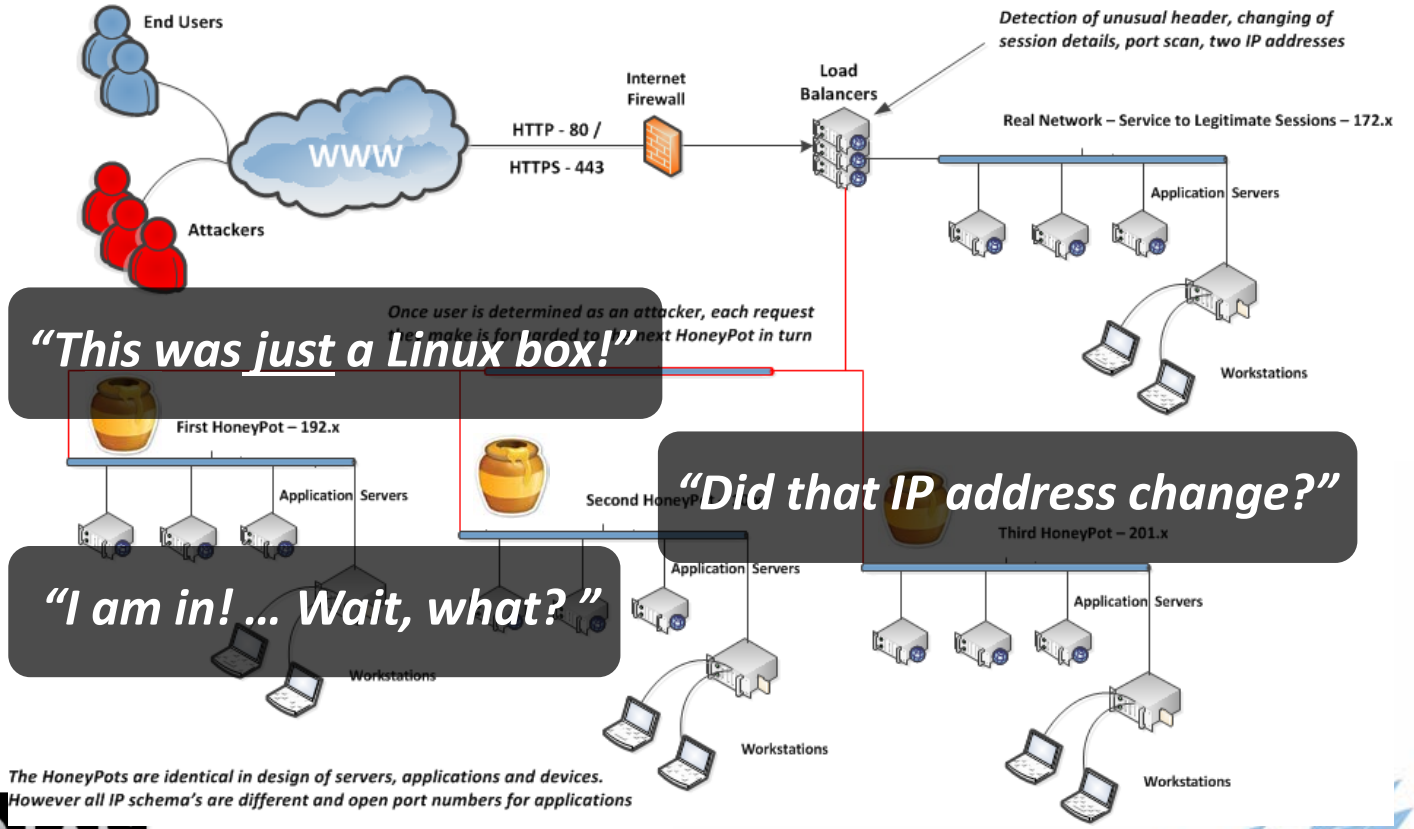
Deceive – Frustrate Your Attacker



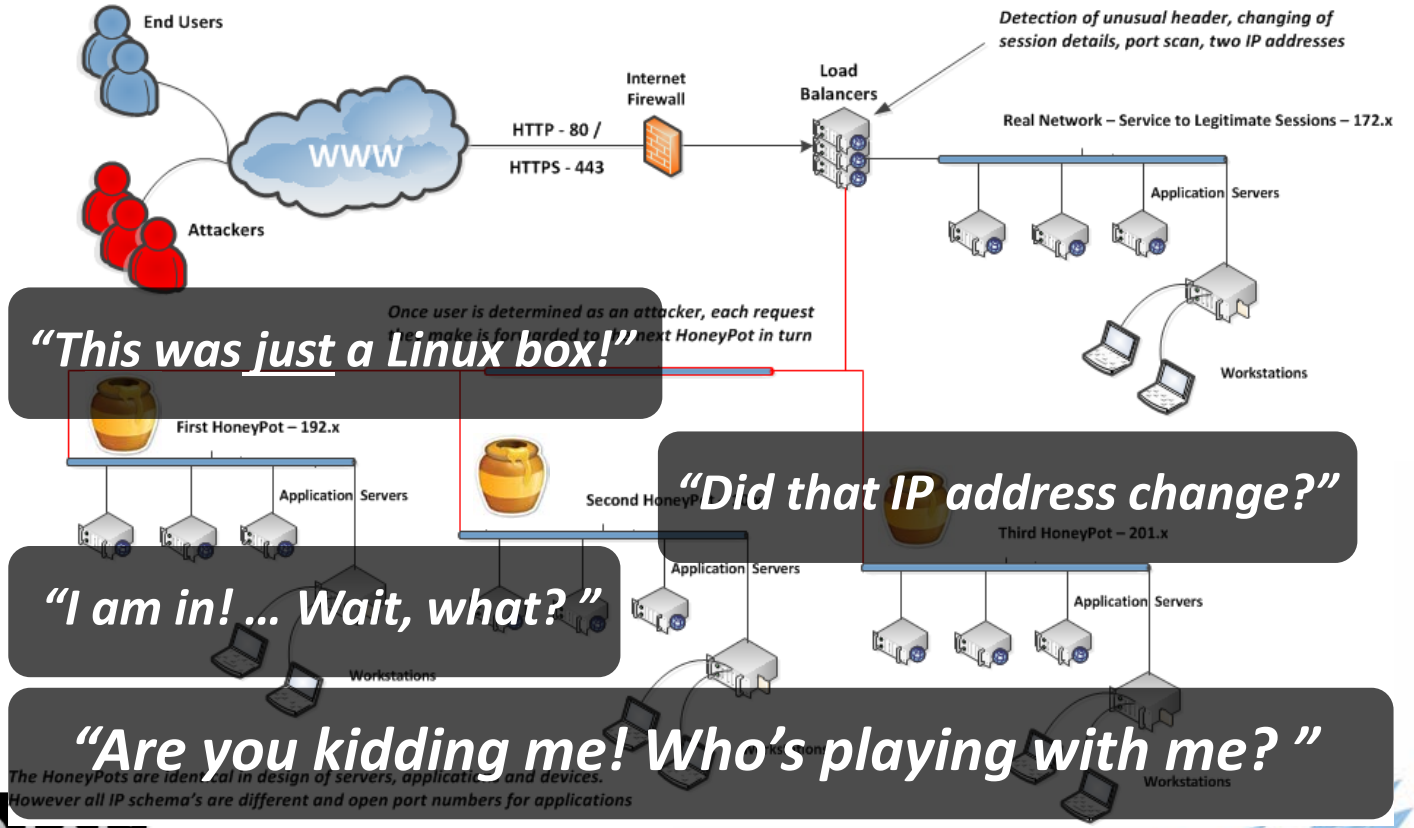
Deceive – Frustrate Your Attacker



Deceive – Frustrate Your Attacker



Deceive – Frustrate Your Attacker



"This was just a Linux box!"

"Did that IP address change?"

"I am in! … Wait, what? "

"Are you kidding me! Who's playing with me? "

Break the Rules

Don't

- Become An Easy Target
- Be predictable
- Be passive
- Be transparent
- Constrain Your Team

Do

- Multiple forces through automation
- Switch network conditions
- Pre-approve Mitigation Actions
- Encode asset names
- Lead a team strategy

INVOTAS

Apply

- What's a Single Simple Action that you can change next week?
  - Design your team strategy
  - Research automation capabilities
- In the next three months, what can you do?
  - Encode names for critical assets
  - Plan network changes
  - Identify and pre-approve known, frequent mitigations