

**TEAMNAME**

## Briefing

You've been recruited to help recover the Tesseract, a cache of scientific data left behind by John Smith, the founder of a small scientific thinktank doing research into all kinds of strange areas of science. Since his demise, the world's governments and various private institutions have been working to gain access to the vault containing the Tesseract, however until now no-one has had any luck discovering the password that allows access to the vault. Rumors have recently begun circulating from those who were close to John Smith, that the answer lies in the various scientific outposts and probes that John Smith sent out to the wider solar system and into the Earth's crust over the course of his life.

These documents contains all the information we have on each of the 25 sites that we believe contain information that is vital to unlock the secret of the Tesseract. The information you are looking for will be of the form `tesseract2014{FLAG}`. As you discover this information, you'll be able to turn it in to the data terminal we've recovered to verify the validity of the information. Different sites are worth different amounts. (Only the FLAG, and not the surrounding `tesseract2014{}`) Unfortunately, you are not alone in this quest and there are other groups that are chasing down these leads and trying to gain control of the vault. Hopefully you'll be able to discover the secrets that are contained in these sites, and open the vault containing the Tesseract before others do.

Only the top 8 teams will have the opportunity to provide the 9 symbol code that could potentially open the Tesseract Vault. Placement is determined by the number of points you've gained, and then determined by earliest final submission in case of ties. The top team will receive a \$500 finder's fee, while the second place team will receive a \$250 better luck next time award. Whoever delivers the secret of the Tesseract will also receive a \$250 recognition award.

Additionally, there are a number of academics and hobbyists who are also looking into these sites, and trying to discover their secrets. They are livestreaming their discoveries and methodologies, and we will try broadcasting whenever they release a new presentation on one of the sites. One of our representatives will occasionally come around to see which sites we should steer the academics and hobbyists towards researching and releasing details on.

The information you need to verify pieces of information and to access our secure uplink is:

|                         |   |
|-------------------------|---|
| Team Name               | TEAMNAME  |
| Team Email              | TEAMEMAIL   |
| Username                | USERNAME  |
| Password                | PASSWORD  |
| Neptune Uplink Username | NEPTUNEUSER   |
| Neptune Uplink Password | NEPTUNEPASS   |
| Starting Point          | <a href="http://ctf.mit.edu">http://ctf.mit.edu</a> |
| IRC Channel             | #mitctf on irc.freenode.net                         |

TL;DR:

- There are a total of 25 sites/services with flags of the form `tesseract2014{FLAG}`.
- You may submit flags at the terminal using your login. Don't include `tesseract2014{}`.
- Each service has a point value. Placement is determined by score, and then by time.
- The top 8 teams will have a chance to submit the "Final Code".
- \$500 for 1st, \$250 for 2nd, \$250 for solving the "Final Code".
- Every 90 minutes or so, the organizers will go through solving a challenge and announce the next challenge to be deconstructed. The flag can then be submitted for points.
- The organizers will ask all the teams about which particular challenges they'd like to see solved.

## Ancient Functions

|           |          |
|-----------|----------|
| Category: | REV      |
| Points:   | 300      |
| Author:   | dvorak42 |

We've been able to make contact with a probe in the Kuiper Belt. Luckily it had a buffer overflow that allowed us to dump the contents of the probe, and now we need help figuring out what message is hidden inside.

/098fb86bce33edee3c26b692d50ef11d

### Notes:

## Asteroid Mining

|           |          |
|-----------|----------|
| Category: | EXPLT    |
| Points:   | 100      |
| Author:   | dvorak42 |

One of the Asteroid Mining Bots in the inner part of the Asteroid Belt has an accessible status shell. The speed that its mining at is quite shocking. (Please do not be malicious when you get access.)

`http://ctf6.mit.edu/~explt100/cgi-bin/status.sh`

**Notes:**

## Awesome Images

|           |          |
|-----------|----------|
| Category: | STEG     |
| Points:   | 100      |
| Author:   | dvorak42 |

We've discovered the following image from a VT Space Probe currently in orbit around Mercury. Hopefully you can get some useful data out of it:

`/a6fc9458c855563450791b8aea9cbca0.png`

**Notes:**

## Beaten to Mars

|           |         |
|-----------|---------|
| Category: | EXPLT   |
| Points:   | 300     |
| Author:   | ccp0101 |

We've discovered a service on the Mars probe that John sent out that seems to be a data retriever of some sort. Hopefully you'll be able to get at the heart of the service to get the relevant information off of it.

`ctf4.mit.edu:4433`

**Notes:**

## Combo Breaker

|           |          |
|-----------|----------|
| Category: | PHYS     |
| Points:   | 200      |
| Author:   | dvorak42 |

We've recovered a sealed box from one of the LEO satellites that John commissioned. Hopefully you'll be able to figure out the combo and get inside. Talk to the organizers if you'd like to attempt this site.

### PHYSICAL CHALLENGE #1

**Notes:**

## Distant Communications

|           |          |
|-----------|----------|
| Category: | EXPLT    |
| Points:   | 200      |
| Author:   | dvorak42 |

There is a probe on the Outer edge of the Oort Cloud with vital information. We've been able to recover the communication codes, and you should hopefully be able to communicate with it.

```
/e71cba3a88c1f053270c1f2d19464a56  
ctf7.mit.edu:9696
```

**Notes:**



## Eldritch Scientist

|           |          |
|-----------|----------|
| Category: | RECON    |
| Points:   | 100      |
| Author:   | dvorak42 |

We've discovered a scientist that was helping John out with some of his experimental devices to measure the output of the Sun. While the actual device is still orbiting the Sun and inaccessible, hopefully the scientist has some information on it. We've recovered the following image of the scientist, and have little else to go on:

`/29c1dd478b00b9a92fe3d5c293ca8ec1.png`

**Notes:**

## Esoteric Dumps

|           |          |
|-----------|----------|
| Category: | REV      |
| Points:   | 300      |
| Author:   | dvorak42 |

We've discovered a data dump from a strange machine hidden on a Saturn rover that may contain vital information. Hopefully you'll have better luck at figuring out what it means.

`/0301866e0bd0d16dfca00bebf4a3a5e1.log`

**Notes:**

## Exposed to Attackers

|           |          |
|-----------|----------|
| Category: | FOR      |
| Points:   | 200      |
| Author:   | dvorak42 |

We've recovered a compromised machine that was located at John's Darkside Moon Base. Hopefully you'll be able to get something out of it. Hopefully the attacker kept whatever information was stored there intact.

`/6cf15310435819ab29d47e08ace6d047.zip`

**Notes:**

## Jupiter Tamper

|           |          |
|-----------|----------|
| Category: | PHYS     |
| Points:   | 200      |
| Author:   | dvorak42 |

We've recovered a capsule that was delivered to Jupiter by John's company. There are sensors that will destroy the contents of the capsule if it detects tampering, so you'll need to find a way around that without leaving a trace of your tampering. Talk to the organizers if you'd like to attempt this site.

### PHYSICAL CHALLENGE #2

**Notes:**

## Listening In

|           |         |
|-----------|---------|
| Category: | FOR     |
| Points:   | 100     |
| Author:   | tboning |

We've intercepted a data stream from a server farm South of New Zealand that belongs to John's Company, VT. Perhaps you can find something of value in the data.

`/546e0d7533c459ff3a3e15d1e285b8d5.pcap`

**Notes:**

## Lost in Centauri

|           |          |
|-----------|----------|
| Category: | PHYS     |
| Points:   | 200      |
| Author:   | dvorak42 |

We've gained access to a probe stationed in Alpha Centauri. You'll need to use it to look around for information that may be useful. The space that the probe has access to is mapped to the physical space of Building 26 at MIT. You should only need to search in publicly accessible portions of the building. (Hallways and Stairwells) Please do not touch or remove the information you find.

### BUILDING 26

#### Notes:

## Neptune Over The Sea

|           |          |
|-----------|----------|
| Category: | EXPLT    |
| Points:   | 300      |
| Author:   | dvorak42 |

We've found an old system to communicate with a Neptune Orbiter that John sent out. Maybe you can find something of import on it. (The machine is shared among teams and will be periodically reset. You should only be working on getting privilege escalation and then reading the flag file.)

```
/e389b2efdef91fe836dadf58d19c3256.ko  
18.181.8.53:22
```

**Notes:**

## One Pad To Rule Them All

|           |          |
|-----------|----------|
| Category: | CRYPT    |
| Points:   | 200      |
| Author:   | dvorak42 |

We've recovered a data capsule from the Light Side of the Moon containing vital information. Its been encrypted with an old OTP encryption scheme and we've been able to pull the code for the encryption scheme out of NASA's archives.

`/e9a4fb3d2996b017f98091a4ba01f039.py`

**Notes:**



## Pinned to the Table

|           |          |
|-----------|----------|
| Category: | PHYS     |
| Points:   | 200      |
| Author:   | dvorak42 |

We found an old lockbox underneath Stonehenge, placed there during John's last visit. It may contain vital data, so we'll need you to pick your way through it and recover the information within. Talk to the organizers if you'd like to attempt this site.

## PHYSICAL CHALLENGE #3

**Notes:**

## Pluto Squares

|           |          |
|-----------|----------|
| Category: | WEB      |
| Points:   | 200      |
| Author:   | dvorak42 |

We've downloaded some sort of game off of a probe around Pluto. Perhaps the game contains a way to get more sensitive and valuable data off of the probe. We've setup a connection to the probe at the following link:

<http://ctf1.mit.edu/>

**Notes:**

## Pretty Global Privacy

|           |          |
|-----------|----------|
| Category: | CRYPT    |
| Points:   | 300      |
| Author:   | dvorak42 |

We've discovered an old transmission from Uranus that might contain important information. It seems to be some sort of cipherbox that will encode whatever you send it.

```
/14bae58962031d5173266e9f4463e653.py  
ctf2.mit.edu:4242
```

**Notes:**

## Remotely Executable Probes

|           |          |
|-----------|----------|
| Category: | EXPLT    |
| Points:   | 200      |
| Author:   | dvorak42 |

We've been able to make contact with a probe around Venus that was sent out by John a few years ago. We've also found a copy of its source code that might be useful.

```
/316dd939ca7c09588c85c1d646880e30.py  
ctf8.mit.edu:1234
```

**Notes:**

## Rolling Keys

|           |          |
|-----------|----------|
| Category: | CRYPTO   |
| Points:   | 200      |
| Author:   | dvorak42 |

We've recovered an encrypted file from a lava safe in the Earth's Mantle. Unfortunately the file is damaged and we can't make heads or tails of it. Hopefully you can figure out its secrets.

`/d8d4e90f19b14c93574da6efec05e7be.py`

**Notes:**

## Secretly Constrained

|           |          |
|-----------|----------|
| Category: | MISC     |
| Points:   | 100      |
| Author:   | dvorak42 |

We've found the following inscribed on a time capsule hidden in the Earth's Core. Maybe you'll have some luck deciphering it.

`/ec50550bb351983f297686be32188d5e.dat`

**Notes:**

## Sedna Caught

|           |         |
|-----------|---------|
| Category: | FOR     |
| Points:   | 300     |
| Author:   | tboning |

We've recovered another data stream that might have useful information, then again the controller for the Sedna probe liked to waste their time playing games. (blocks-1-0-0)

/450c9868a7d4311ab40dbb7ed19fb274.pcap

**Notes:**

## Space Cinema

|           |          |
|-----------|----------|
| Category: | REV      |
| Points:   | 200      |
| Author:   | dvorak42 |

We've recovered a recording from a probe around the Sun's Corona, but we haven't been able to decode whatever strange format it is in. We've also included an old spec document we found on John's website.

```
/d4e231d883d38db0971500154d0362ed.xmng  
/439af316ec0ca7c3c94b1e61ec21ea82.txt
```

**Notes:**



## Space Contacts

|           |          |
|-----------|----------|
| Category: | WEB      |
| Points:   | 100      |
| Author:   | dvorak42 |

We've recovered a contact database from one of the VT mining outposts in the Asteroid Belt. Hopefully you'll be able to find something of use on it.

`ctf3.mit.edu:5000`

**Notes:**

## Star Noise

|           |          |
|-----------|----------|
| Category: | REV      |
| Points:   | 100      |
| Author:   | dvorak42 |

We've recovered a file from a time capsule hidden in the Sun's Core. Hopefully you can get useful data out of it.

/625b62aaeb7fc332ca2c048c48ce0b66

**Notes:**

## Stuck in Space

|           |          |
|-----------|----------|
| Category: | PHYS     |
| Points:   | 200      |
| Author:   | dvorak42 |

We've recovered another capsule from the outer part of the Asteroid Belt. Hopefully you can open it without destroying the vital data contained within. You'll need to remove the zipties without breaking or cutting them. Talk to the organizers if you'd like to attempt this site.

### PHYSICAL CHALLENGE #4

#### Notes:

## Bonus Site Alpha

|           |       |
|-----------|-------|
| Category: | BONUS |
| Points:   | ???   |
| Author:   | -     |

Starting at 3 PM, you can talk with the organizers to attempt the challenge for this Site. If you succeed, you'll receive a choice of 10 bonus points for the purpose of breaking ties, a one word hint on one of the challenges, or another comparable bonus.

SEE THE ORGANIZERS

**Notes:**

## Bonus Site Gamma

|           |       |
|-----------|-------|
| Category: | BONUS |
| Points:   | ???   |
| Author:   | -     |

Starting at 6 PM, you can talk with the organizers to attempt the challenge for this Site. If you succeed, you'll receive a choice of 10 bonus points for the purpose of breaking ties, a one word hint on one of the challenges, or another comparable bonus.

SEE THE ORGANIZERS

**Notes:**

## Bonus Site Omega

|           |       |
|-----------|-------|
| Category: | BONUS |
| Points:   | ???   |
| Author:   | -     |

Starting at 9 PM, you can talk with the organizers to attempt the challenge for this Site. If you succeed, you'll receive a choice of 10 bonus points for the purpose of breaking ties, a one word hint on one of the challenges, or another comparable bonus.

SEE THE ORGANIZERS

**Notes:**

## Site Flags

| Site                       | Flag |
|----------------------------|------|
| Ancient Functions          |      |
| Asteroid Mining            |      |
| Awesome Images             |      |
| Beaten to Mars             |      |
| Combo Breaker              |      |
| Distant Communications     |      |
| Eldritch Scientist         |      |
| Esoteric Dumps             |      |
| Exposed to Attackers       |      |
| Jupiter Tamper             |      |
| Listening In               |      |
| Lost in Centauri           |      |
| Neptune Over The Sea       |      |
| One Pad To Rule Them All   |      |
| Pinned to the Table        |      |
| Pluto Squares              |      |
| Pretty Global Privacy      |      |
| Remotely Executable Probes |      |
| Rolling Keys               |      |
| Secretly Constrained       |      |
| Sedna Caught               |      |
| Space Cinema               |      |
| Space Contacts             |      |
| Star Noise                 |      |
| Stuck in Space             |      |