
# Synapse Bootcamp

## Module 1

## Introduction and Overview

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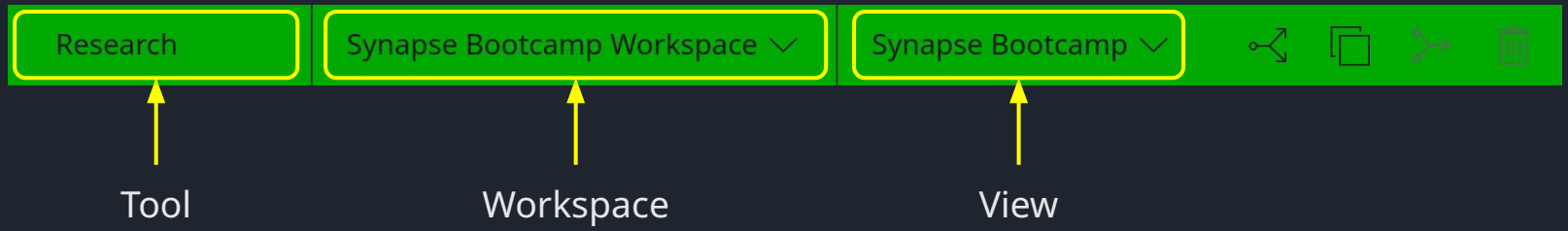
# Administrivia

- Your instructors
- Course overview
- Format
  - Hear it - important concepts and background information
  - See it - instructor demonstrations
  - Do it - hands-on exercises
- Logistics
  - Audio / video, questions, etc.
  - Pre-flight checklist

# Your Demo Instance

- Includes multiple data sets ("views")
- Additional activities / challenges
  - APT1 Scavenger  Hunt
  - KC7 Cybersecurity Game
- For class, your Top Bar should look like this:




Don't worry, we will set this up during the Exercises!

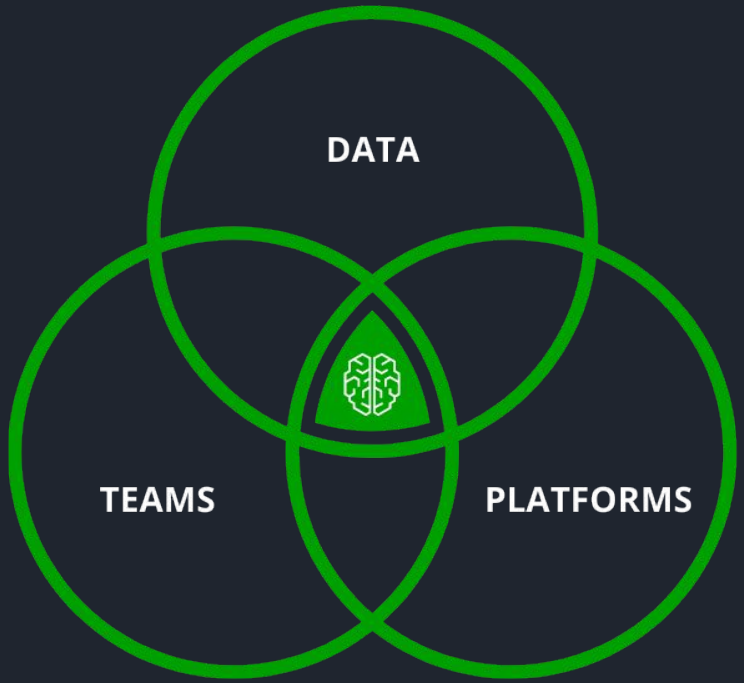
# Objectives

- Describe Synapse and its key components
- Provide an overview of essential Synapse UI elements
- Introduce the most commonly used Synapse Tools

# What is Synapse?

# Synapse

- A versatile central intelligence system created to support analyst teams in every stage of the intelligence life cycle
- Fuses interdisciplinary data, platforms, and teams into a single system to facilitate collaborative analysis



# Synapse Terms

| Term | Meaning |
| --- | --- |
| **Synapse** | The application and all components - all the things! |
| **Storm** | The "data language" used to interact with Synapse |
| **Power-Ups** | Provide add-on capabilities to Synapse |
| **Optic** | Synapse's UI |
| **Cortex** | Synapse's data store / knowledge graph |
| **Axon** | Synapse's file storage |

We like to be consistent and just use "Synapse" but knowing these additional terms is helpful!

# Data Model

- Structural representation of all analytically relevant data
  - A file wrote another file to disk during execution
  - An FQDN resolved to an IP within a particular time frame
  - An account posted a message to a forum on a particular date
- Automatically capture relationships among data
- Accurately represent "the real world"

Use Synapse's **Data Model Explorer** to examine the data model.

# Data Model Elements

# Analytical Model

- Allows you to capture assessments about data
- Assessments are recorded on nodes using labels called tags
  - An FQDN was sinkholed on a particular date
  - An indicator is associated with a specific malware family or threat group
  - A file is a legitimate / trusted binary

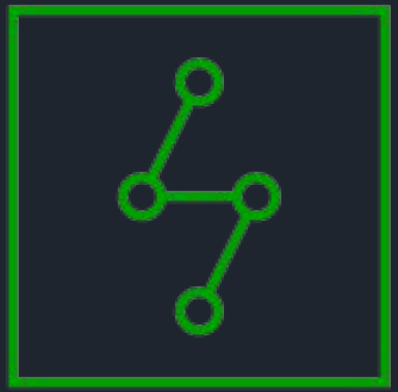
# Tags

- A specialized node used to annotate and group objects (nodes)
- Hierarchical to organize / structure your observations
  - `cno.threat.t13.own`
- Optional timestamps
  - Interval when the tag was true or relevant
  - `cno.threat.t13.own=(2017/04/10, 2019/04/10)`

Use Synapse's **Tag Explorer** to examine the tags in your instance of Synapse.

# Storm

- Synapse's query language
- An intuitive "data language"
  - Use Storm the same way you think about data and relationships in the "real world"
- Allows you to ask (and answer) **any** analytical question
- Start simple and build on the basics as needed



# Interacting with Data

| Operation | Meaning |
| --- | --- |
| **Lift** | Select data (nodes) from Synapse |
| **Pivot** | Move from one set of nodes to another set that share the same **property** |
| **Traverse** | Move from one set of nodes to another set that are linked by an **edge** |
| **Filter** | Include / exclude a subset of nodes |
| **Modify / Edit** | Add, modify, or delete nodes or properties<br>Add or remove tags |
| **Run** | Execute a Storm command |

# The Synapse UI - Demo

# Summary

- **Synapse** is a central analysis and intelligence platform
- Synapse's key components are its **data model, analytical model,** and **query language** (Storm)
- Synapse **Power-Ups** add functionality to Synapse
- The Synapse web-based UI includes multiple tools to support analysis tasks, including **Workspaces, Console, Power-Ups** and **Help**
- **Research** is the main analysis tool, and includes multiple **display modes** for visualizing data