

#TeamsNation @DrAzureAD

Regular

~~Deep~~-dive to Teams Internal APIs

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Microsoft Teams



Microsoft Tech Community

About the speaker



Who?

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- Senior Principal Security Researcher @ Secureworks CTU
- Creator of *AADInternals* toolkit
- MVP (Identity & Access, Mobile Device Management), MVR

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- Introduction to Teams
- How to access Teams functionality and data
- Demos!



Introduction to Teams

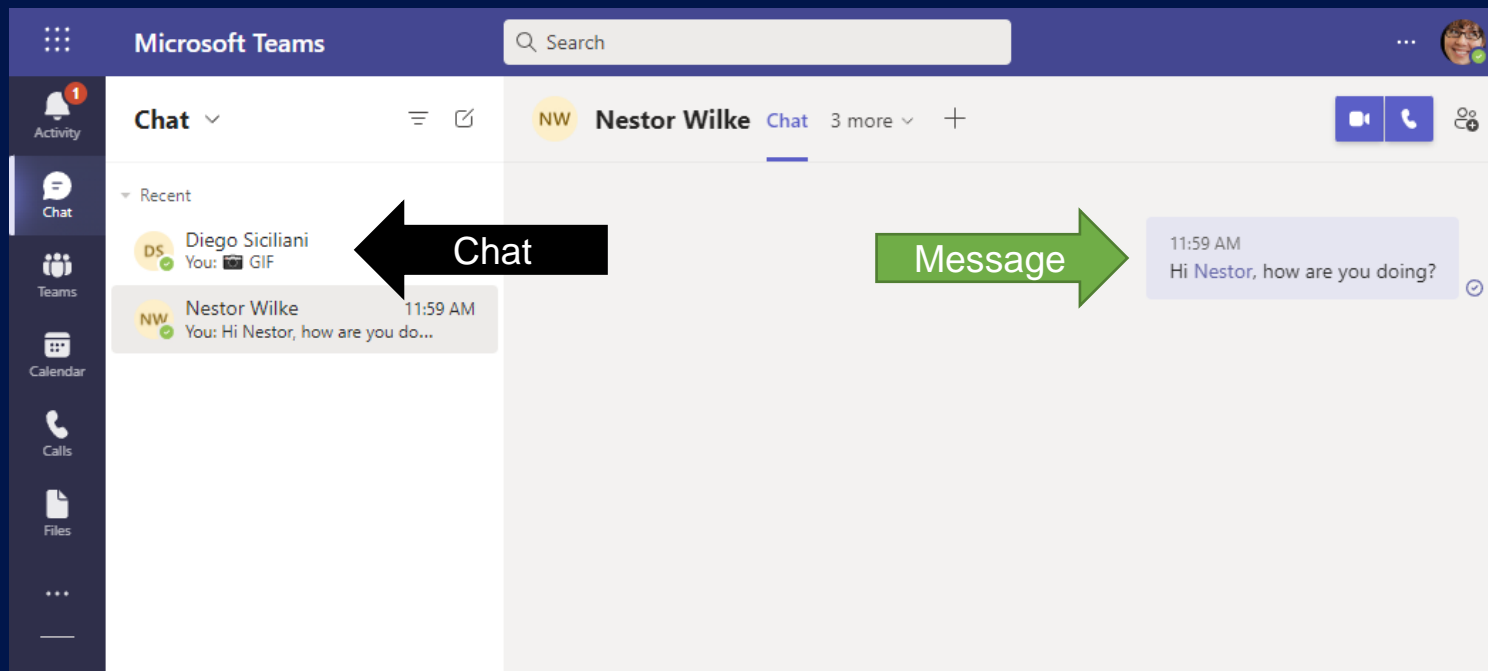
Teams

The screenshot shows the Microsoft Teams interface. On the left is a navigation sidebar with icons for Activity, Chat, Teams, Calendar, Calls, and Files. The main area displays a team named 'Teams Nation' with a 'General' channel selected. A blue arrow labeled 'Team' points to the 'Teams Nation' entry, and an orange arrow labeled 'Channel' points to the 'General' channel. The main content area shows a 'Welcome to the team!' message with a list of items to get going. Below this is a message from Nestor Wilke: 'Hi all!'. A green arrow labeled 'Message' points to this message. Below the message are replies from Diego Siciliani and Megan Bowen. At the bottom right, there are buttons for 'Create more channels' and 'Open the FAQ'.



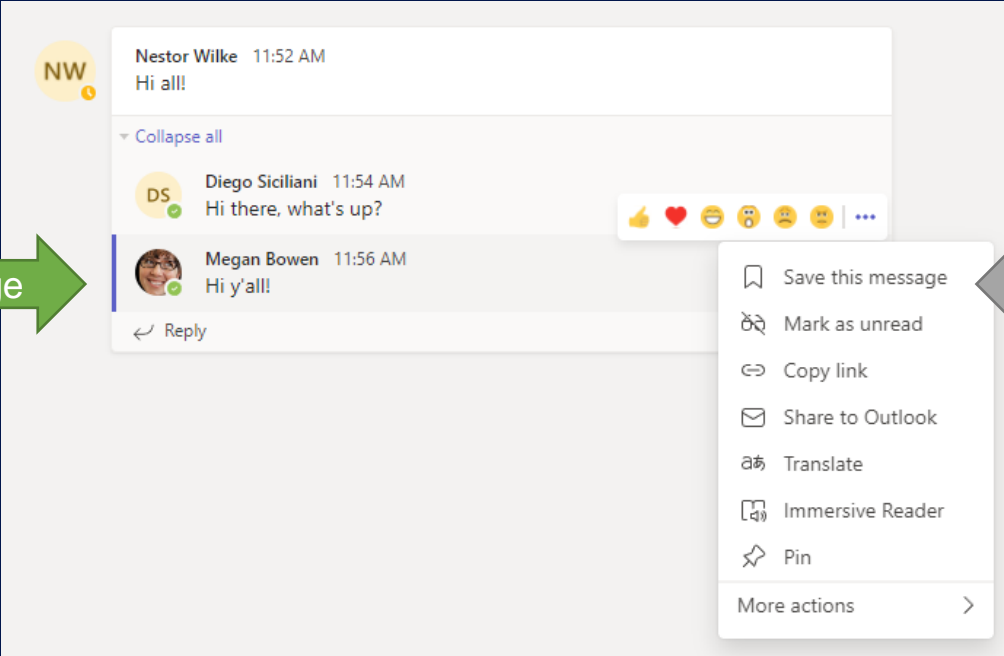
Introduction to Teams

Chat



Introduction to Teams

Messages



The screenshot shows a Microsoft Teams chat window with three messages:

- Nestor Wilke 11:52 AM: Hi all!
- Diego Siciliani 11:54 AM: Hi there, what's up?
- Megan Bowen 11:56 AM: Hi y'all!

A green arrow labeled "Message" points to the message from Megan Bowen. A grey arrow labeled "Options" points to the context menu that appears over her message. The context menu includes the following options:

- Save this message
- Mark as unread
- Copy link
- Share to Outlook
- Translate
- Immersive Reader
- Pin
- More actions >

Introduction to Teams

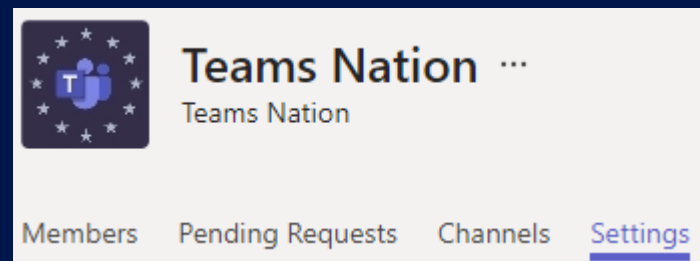
Settings and policies

Administrator

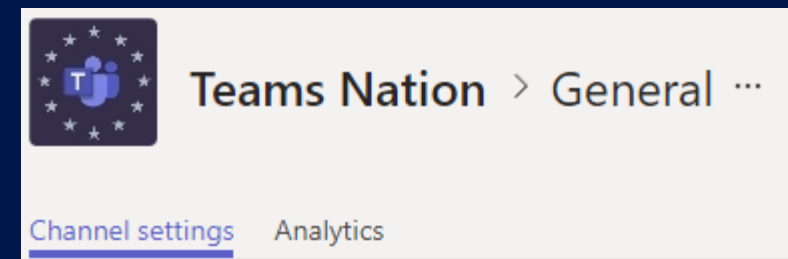


- Tenant level settings
- Policies
 - Org-wide default
 - Group assignments

Teams Owner



- Teams level settings



- Channel level settings

Introduction to Teams

Settings and policies



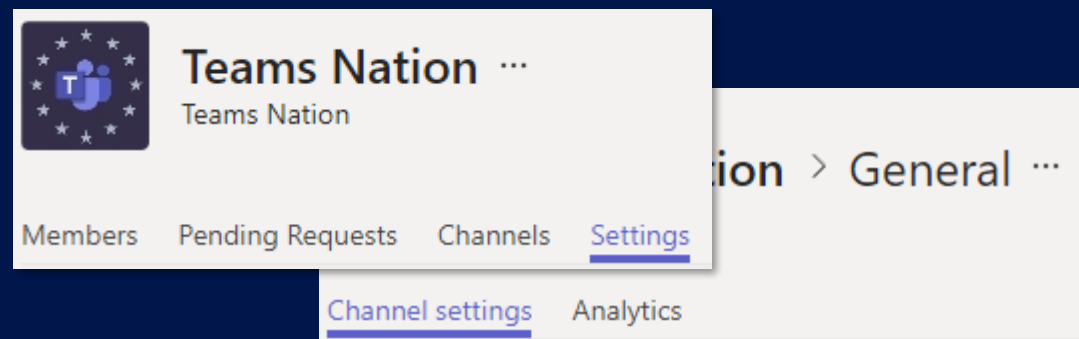
On startup Teams client obtains policies and settings for:

- Tenant level
- Teams & level

Changes are constantly polled.

Introduction to Teams

Settings and policies



```

"tenantSettingsV2": {
  "value": {
    "isMicrosoftTeamsEnabled": true,
    "apps": {
      "email": {
        "miscellaneous": {
          "meetups": {
            "funControl": {
              "messaging": {
                "enableUserEditOwnMessages": true,
                "enableUserDeleteOwnMessages": true,
                "enableUserPrivateChat": true
              }
            }
          }
        }
      }
    }
  }
},
"files": {
  "isDropboxEnabled": true,
  "isBoxEnabled": true,
  "isShareFileEnabled": true,
  "isGoogleDriveEnabled": true
}

```

```

"pictureETag": "\"03D61626\"",
"description": "Teams Nation",
"isFavorite": true,
"isCollapsed": false,
"isDeleted": false,
"isTenantWide": false,
"smtpAddress": "TeamsNation@woodgrowe.office365labs.online",
"threadVersion": "v9",
"threadSchemaVersion": "v9",
"conversationVersion": null,
"classification": null,
"accessType": 1,
"guestUsersCategory": null,
"dynamicMembership": false,
"maximumMemberLimitExceeded": false,
"teamSettings": {
  "adminDeleteEnabled": true,
  "deleteEnabled": false,
  "editEnabled": false,
  "createTopic": false,
  "updateTopic": false,
  "deleteTopic": false,
}

```

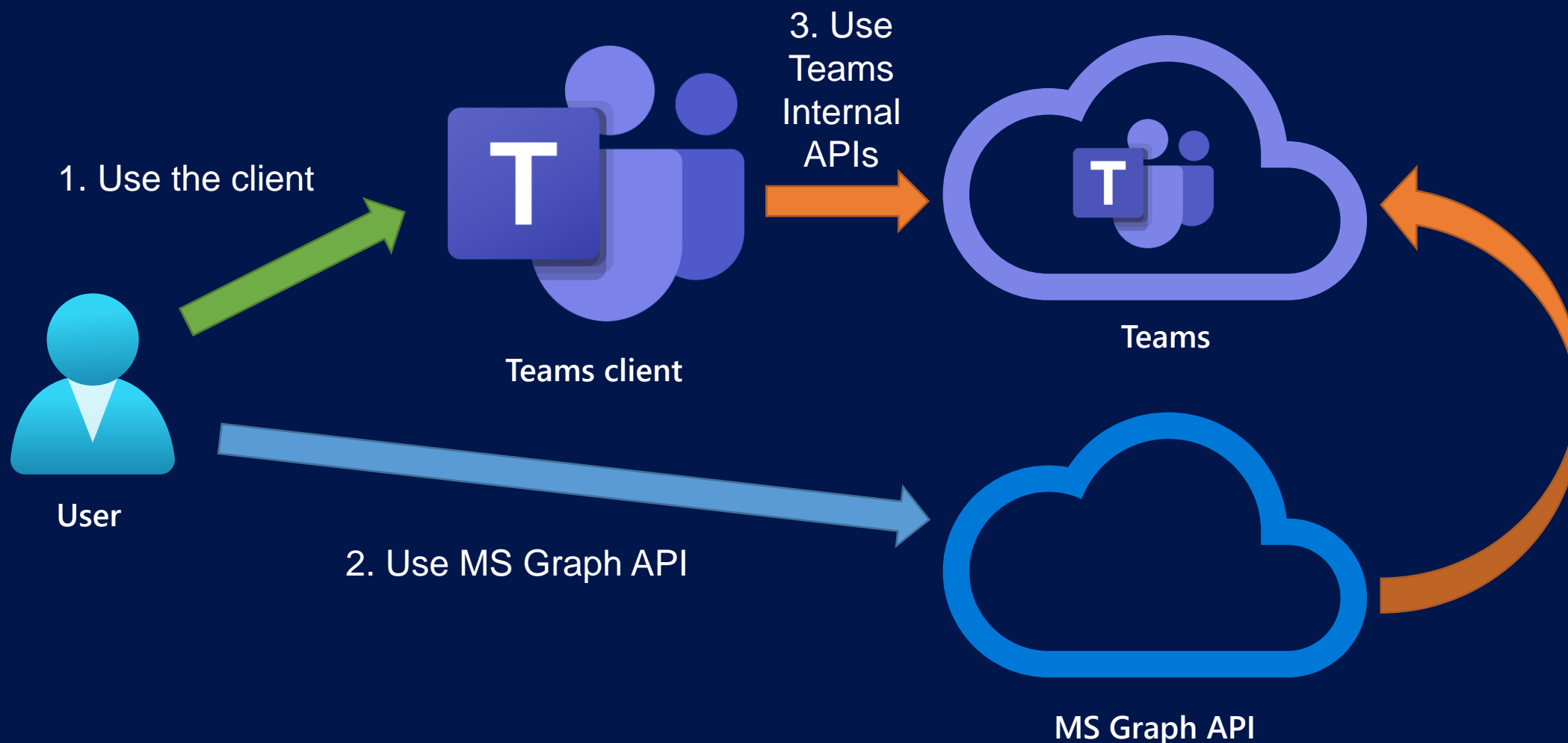
```

"next": "https://northeurope-prod-3.notifications.teams.microsoft.com",
"eventMessages": [
  {
    "time": "2022-03-18T11:15:33.0861847Z",
    "type": "EventMessage",
    "resourceLink": "https://notifications.skype.net/v1/threads/1",
    "resourceType": "ThreadUpdate",
    "resource": {
      "id": "19:tY_j3nHH0dDNfGQz1AjUAxPDni9ZLF6v1Uv_kxCMNIs1@th",
      "messages": "https://notifications.skype.net/v1/users/ME/",
      "version": 1647602133070,
      "type": "Thread",
      "properties": {
        "teamAlias": "TeamsNation",
        "sharepointSiteUrl": "https://aadinternalswoodgrowse.s",
        "aadTeamSmtpAddress": "TeamsNation@aadinternalswoodgr",
        "teamStatus": "{\"exchangeTeamCreationStatus\":1,\"sh",
        "spaceAdminSettings": {
          "userSettings": {
            "deleteEnabled": true,
            "editEnabled": true,
            "createTab": false,
            "updateTopic": false,
            "createTopic": false,
          }
        }
      }
    }
  }
]

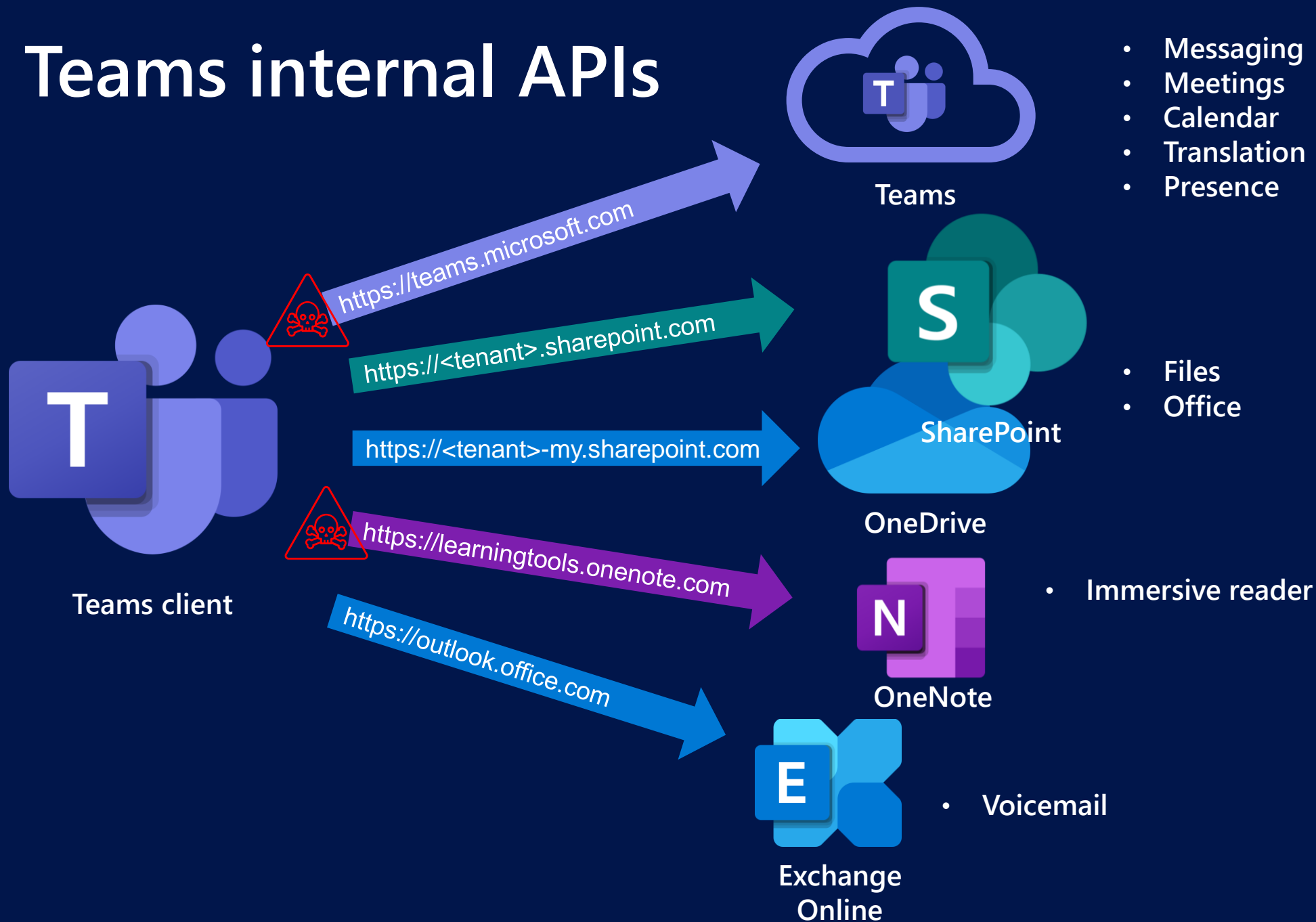
```



How to access Teams functionality & data?



Teams internal APIs





- Bypassing security feature (edit messages)
- Cross-tenant presence (federation ❤️)
- Cross-tenant phishing (federation ❤️)
- Some fun stuff 🤪



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