Abusing Teams privacy, security, and compliance

Dr. N Syynimaa | Secureworks | MVP

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Microsoft Teams Microsoft Tech Community

Who?

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Contents

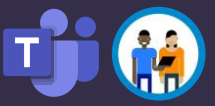
- Extracting Teams content as a guest user
- Bypassing Teams policies

AADInternals

- PowerShell module (script)
- Azure AD & Microsoft 365 administration and hacking toolkit
- Open source:
  - https://github.com/gerenios/aadinternals
  - https://o365blog.com/aadinternals/
- Easy to install and use:

```
C:\PS> Install-Module AADInternals
C:\PS> Import-Module AADInternals
```

Extracting Teams content as a guest user



Azure AD and Microsoft 365 kill chain

	Recon	Compromise	Persistence	Actions on Intent
Outsider	Get-AADIntTenantDomains Get-AADIntOpenIDConfiguration Get-AADIntLoginInformation	Invoke-AADIntPhishing		
	Get-AADIntAzureTenants Get-AADIntAzureInformation Get-AADIntSPOSiteUsers Get-AADIntSPOSiteGroups Invoke-AADIntReconAsGuest Invoke-AADIntUserEnumerationAsGuest			
	Invoke-AADIntReconAsInsider Invoke-AADIntUserEnumerationAsInsider			New-AADIntBulkPRTToken Join-AADIntDeviceToAzureAD Join-AADIntDeviceToIntune
Admin	Get-AADIntAzureSubscriptions	Grant-AADIntAzureUserAccessAdminRole Set-AADIntAzureRoleAssignment Invoke-AADIntAzureVMScript Register-AADIntPTAAgent Set-UserMFA Set-UserMFAApps	ConvertTo-AADIntBackdoor Set-AADIntPassThroughAuthentication	New-AADIntSAMLToken New-AADIntKerberosTicket Open-AADIntOffice365Portal
On-prem admin		Export-AADIntADFSSigningCertificate Get-AADIntSyncCredentials Set-AADIntUserPassword Install-AADIntPTASpy		New-AADIntSAMLToken New-AADIntKerberosTicket Open-AADIntOffice365Portal

https://o365blog.com/aadkillchain/

Guest user permissions

Extracting Teams content as a guest user

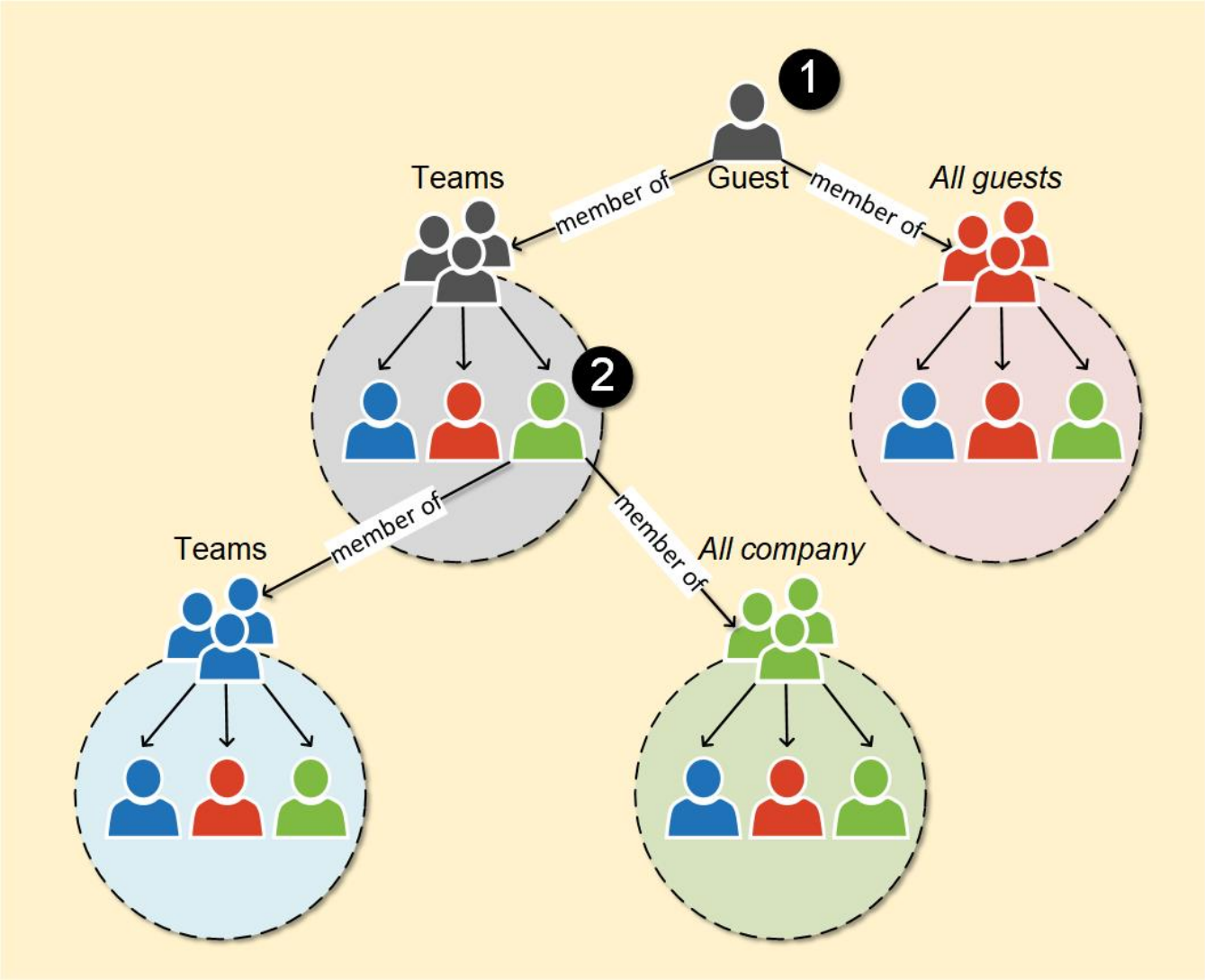
Guest users *

- Can’t browse information from the tenant
- Can retrieve information about others by providing UPN or GUID
- Can read properties of groups they belong to
- Can’t view information about any other tenant objects

*) https://docs.microsoft.com/en-us/azure/active-directory/fundamentals/users-default-permissions

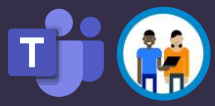
User enumeration

Extracting Teams content as a guest user



- Azure AD traversal possible if any “starting point” is known!

DEMO!

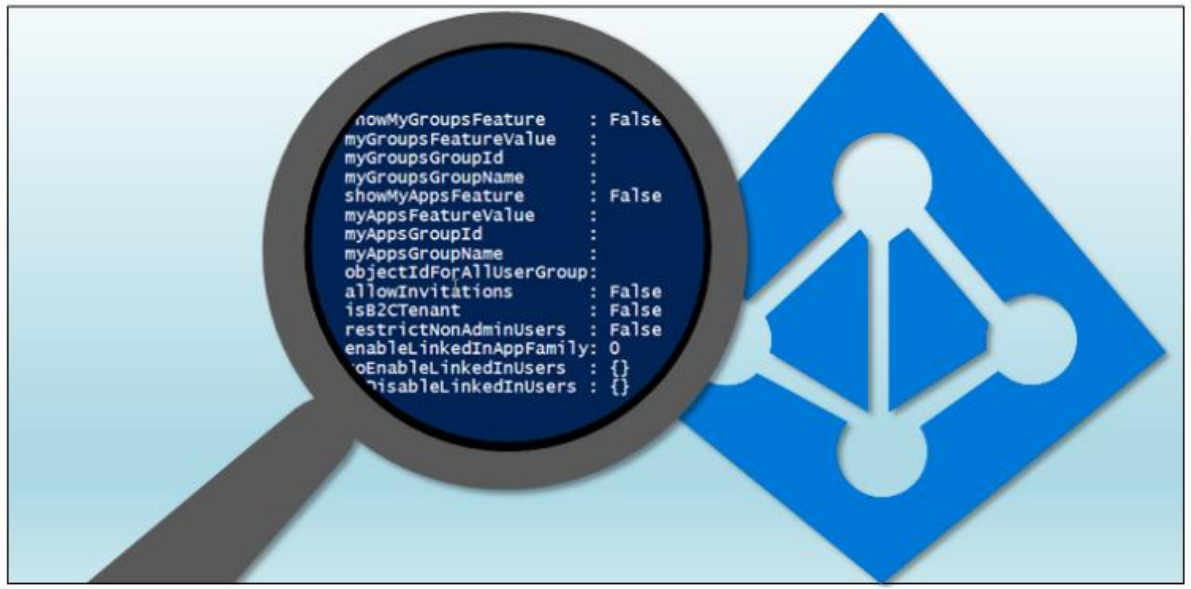


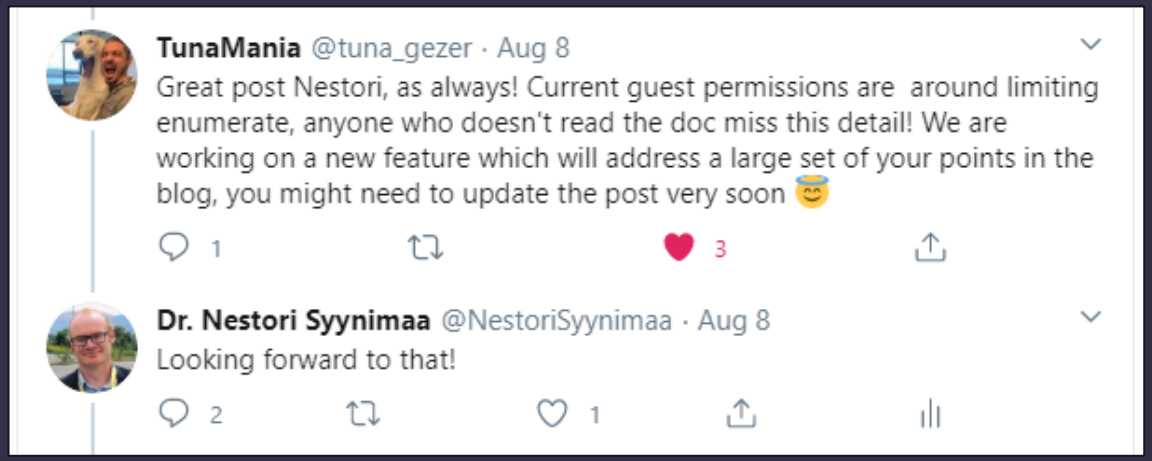
Blogged on August 7th 2020

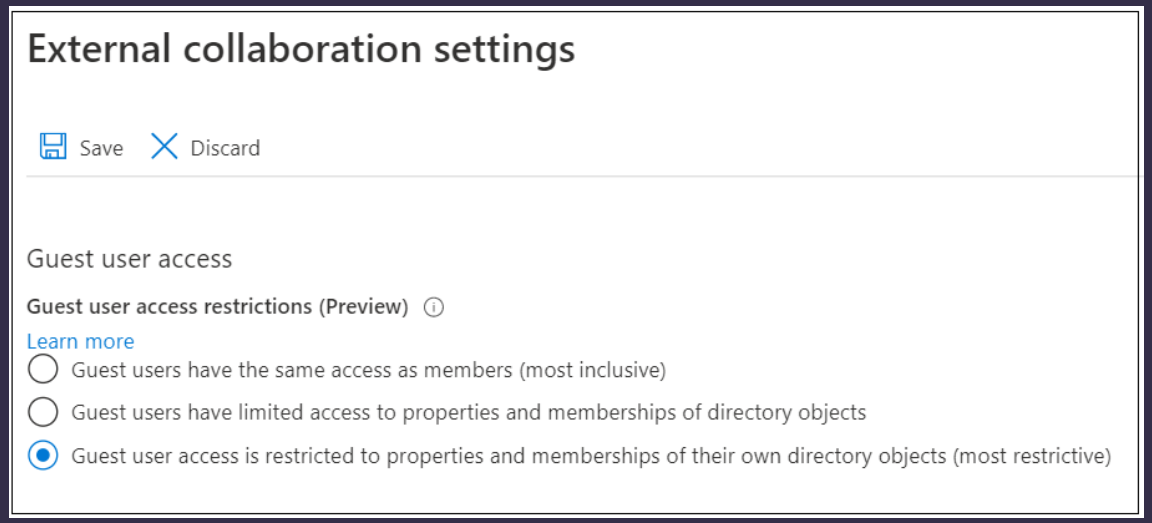
Extracting Teams content as a guest user

Quest for guest access: Azure Active Directory reconnaissance as a guest

June 14, 2020 (Last Modified: September 06, 2020) blog

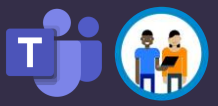






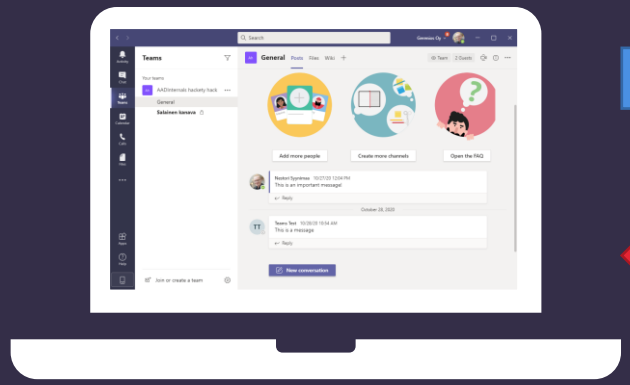
https://o365blog.com/post/quest_for_guest/

Bypassing Teams Security Policies



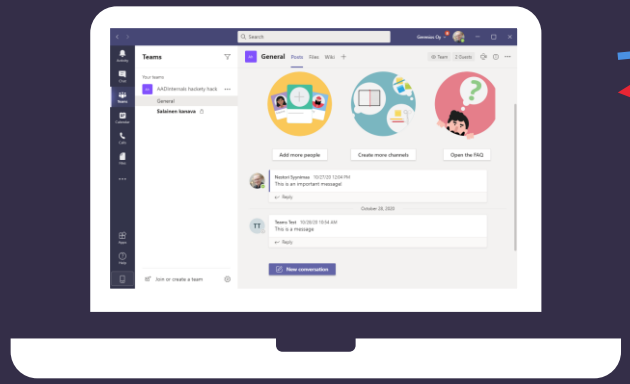
During the Teams start-up

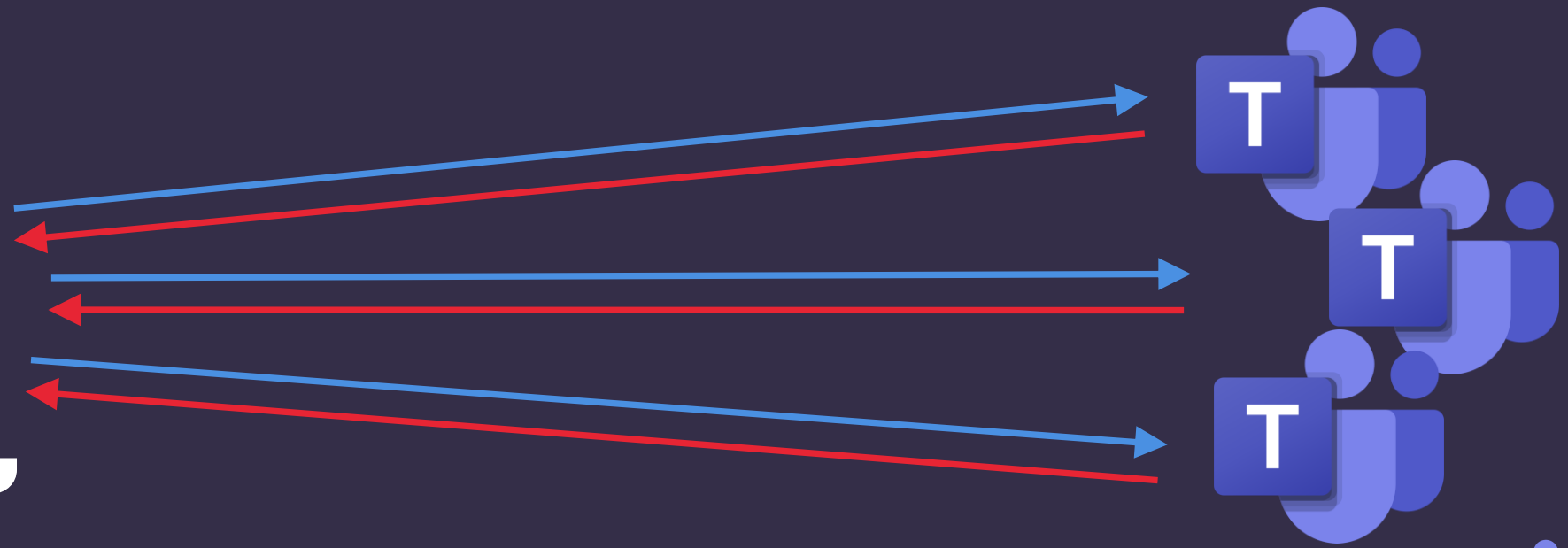
Bypassing Teams Policies



https://teams.microsoft.com/api/mt/../useraggregatesettings

messagingPolicy, meetingPolicy, applicationPolicy





Example: messagingPolicy

Bypassing Teams Policies

```
"messagingPolicy": {
    "value": {
        "allowUserEditMessage": false,
        "allowUserDeleteMessage": false,
        "allowUserChat": false,
        "allowGiphy": true,
        "giphyRatingType": "Moderate",
        "allowGiphyDisplay": true,
        "allowPasteInternetImage": true,
        "allowMemes": true,
        "allowStickers": true,
        "allowUserTranslation": true,
        "allowUrlPreviews": true,
        "readReceiptsEnabledType": "UserPreference",
        "allowImmersiveReader": true,
        "allowPriorityMessages": true,
        "audioMessageEnabledType": "ChatsAndChannels",
        "channelsInChatListEnabledType": "DisabledUserOverride",
        "allowRemoveUser": true,
        "allowSmartReply": true
    }
}
```

About client-side “security”

Bypassing Teams Policies

CWE-602: Client-Side Enforcement of Server-Side Security

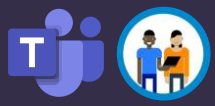
- *" The software is composed of a server that relies on the client to implement a mechanism that is intended to protect the server."*
- *" .. an attacker can modify the client-side behavior to bypass the protection mechanisms.."*

Accessing Teams via API

Bypassing Teams Policies

- **Option 1: MS Graph API**
  - Security enforced on the server-side ☺
  - Create & manage Teams and channels
  - Chat (send messages)
- **Option 2: Teams internal API**
  - Client-side security ☹
  - Create & manage Teams and channels
  - Chat (send, edit, and remove messages)

DEMO!

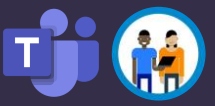


Summary

- Guest users can extract data from Teams
  - To mitigate, restrict guest users' rights to a minimum!
- Teams security settings can be bypassed with direct Teams API calls
  - Teams security settings are **NOT** a security measure!

Thank you!

Questions..?



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https://teamsnation.rocks/feedback