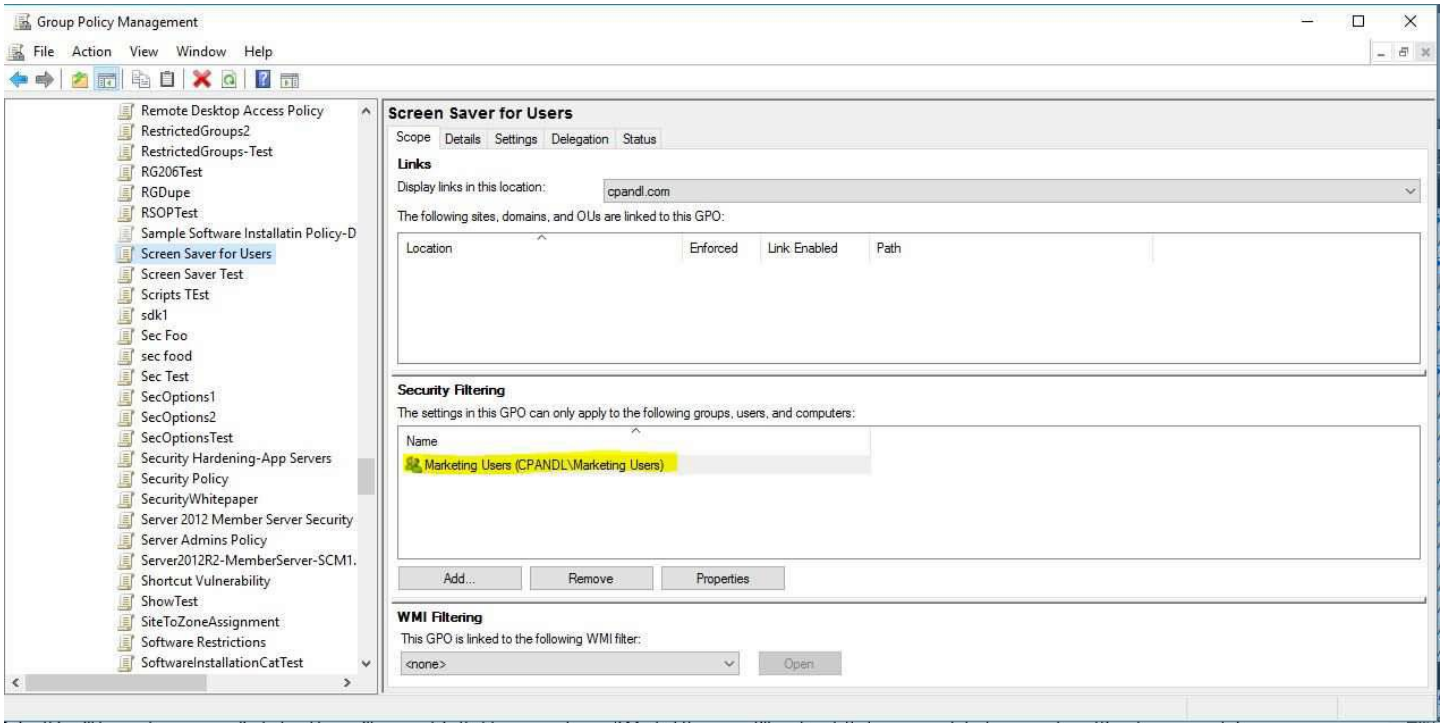
New Group Policy Patch MS16-072– "Breaks" GP Processing Behavior

Written by Darren Mar-Elia Posted on Wednesday, June 15, 2016 15 Comments

https://sdmsoftware.com/group-policy-blog/bugs/new-group-policy-patch-ms16-072-breaks-gp-processing-behavior/

This morning I woke up to an email from a fellow Group Policy MVP–Martin Binder–warning that folks were seeing GP Processing issues after the recent slew of Patch Tuesday updates were applied. Indeed, I had noted late on Tuesday via Twitter that there was a fix to GP in this latest round of patches, that prevents a privilege elevation vulnerability in GP processing. Great! Well, not so great. It turned out that the fix was a bit problematic for folks who had set per-user security group filtering in their GPOs, as shown in the figure below. GPOs set up this way were no longer being processed after the patch was applied to client systems.



A GPO with no Authenticated Users in Security Filtering

Specifically, if you'd set security group filtering for GPOs that contain per-user settings, and you'd **removed** Authenticated Users completely from the GPO's delegation, then GPO processing for per-user settings would fail after applying MS16-072. As the day went on, I mostly ignored this issue, until tonight I read the KB article surrounding this patch in detail. Specifically, there's a section called **Known Issues** where it says the following:

"MS16-072 changes the security context with which user group policies are retrieved. This by-design behavior change protects customers' computers from a security vulnerability. Before MS16-072 is installed, user group policies were retrieved by using the user's security context. After MS16-072 is installed, user group policies are retrieved by using the machines security context"

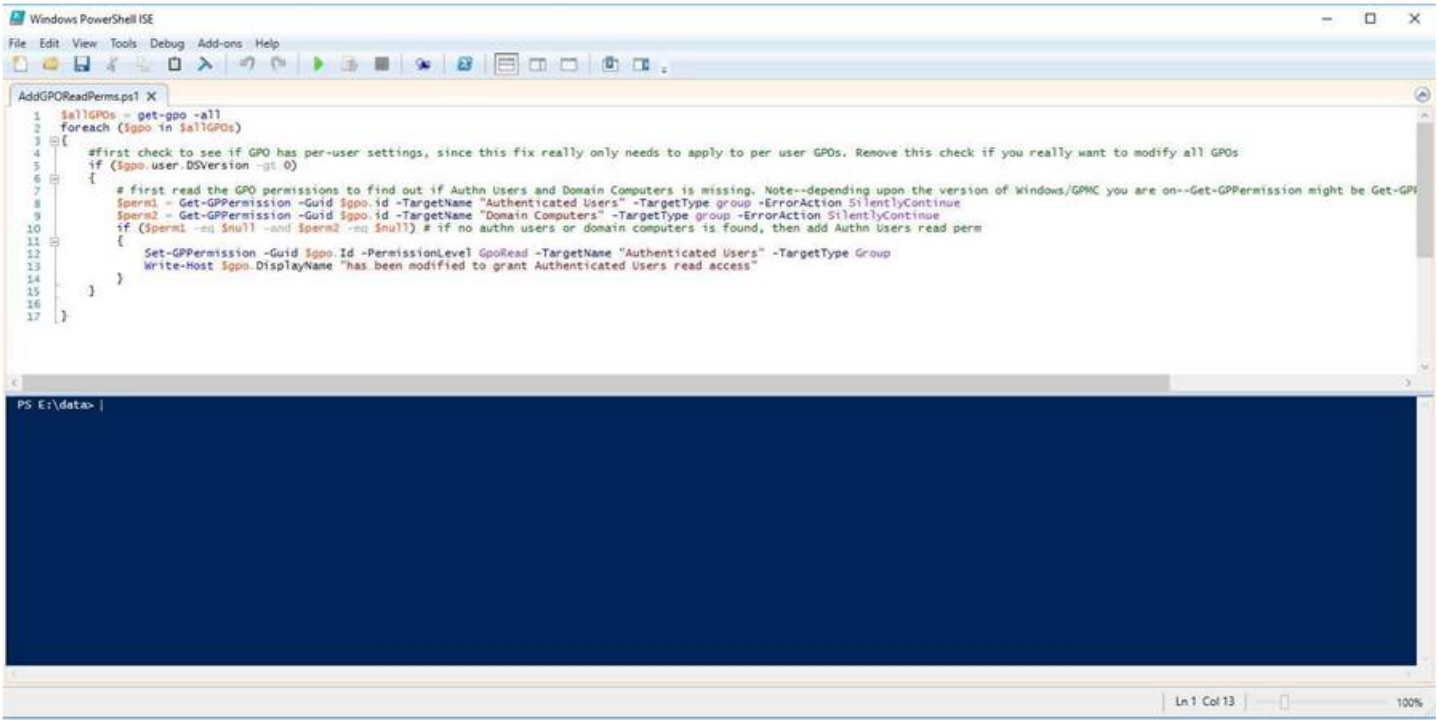
Um….that's big. What it's saying is that per-user GP processing has fundamentally changed. It goes on to further say:

"This issue may occur if the Group Policy Object is missing the Read permissions for the Authenticated Users group or if you are using security filtering and are missing Read permissions for the domain computers group."

Indeed, many people found that by adding back the Authenticated Users Access Control Entry (ACE) to the GPO's delegation with Read access (NOTE: I AM SAYING **READ** ACCESS–THIS IS **DIFFERENT** THAN READ AND "APPLY GROUP POLICY", which will have the affect of nullifying any security group filtering you are using on the GPO) per-user GP processing will go back to working. The above referenced article says that you can add either Authenticated Users or **Domain Computers** with Read access on the GPO to solve this, because the per-user settings are running in the computer's security context, so adding Domain Computers should give the computer the access it needs to continue processing those per-user settings.

Mitigation

OK, again, this is a BIGGGGG change, and I'm sure a lot of folks got broken by this. What I've done is created a quick PowerShell script for those who have a lot of GPOs in your environment and don't want to manually make this change. What the script does is get a list of all of your GPOs in the current domain. It then iterates through them, checks to see if the Authenticated Users or Domain Computers groups are found in the GPO's delegation. If not found, then the script adds the Read (only) permission to the GPO for Authenticated Users. You might decide you'd rather use Domain Computers, because some people have purposefully prevented Authenticated Users from reading their GPOs to prevent unwanted security posture discovery. You can easily modify the script to add Domain Computers instead of Authenticated Users by modifying line 9 of the script. Note that this script needs the Group Policy PowerShell module that is part of GPMC to be installed to function:



GPO Permission script for MS16-072

```
$allGPOs = get-gpo -all
foreach ($gpo in $allGPOs)
{
    #first check to see if GPO has per-user settings, since this fix really only needs to apply to per user GPOs. Remove this check if you really
want to modify all GPOs
    if ($gpo.user.DSVersion -gt 0)
    {
        # first read the GPO permissions to find out if Authn Users and Domain Computers is missing. Note--depending upon the version of Windows/GPMC
you are on--Get-GPPermission might be Get-GPPermissionS
        $perm1 = Get-GPPermission -Guid $gpo.id -TargetName "Authenticated Users" -TargetType group -ErrorAction SilentlyContinue
        $perm2 = Get-GPPermission -Guid $gpo.id -TargetName "Domain Computers" -TargetType group -ErrorAction SilentlyContinue
        if ($perm1 -eq $null -and $perm2 -eq $null) # if no authn users or domain computers is found, then add Authn Users read perm
        {
            Set-GPPermission -Guid $gpo.Id -PermissionLevel GpoRead -TargetName "Authenticated Users" -TargetType Group
            Write-Host $gpo.DisplayName "has been modified to grant Authenticated Users read access"
        }
    }

}
```

PLEASE NOTE: THIS SCRIPT CHANGES PERMISSIONS ON YOUR GPOs. **Test first** in a non-production environment before running it against your live GPOs. It's provided for you as-is, with no warranty!

June 16 Edit: I made a change to the script, to have it check for GPOs that contain user settings, since we're only interested in doing this fix for GPOs with per-user settings. Also note that Microsoft has just released an assessment-only script here.

June 17 Edit: I added a blog post to show how you can modify the default permissions that get stamped on a newly created GPO, to include Domain Computers with Read access

Next Steps

I've been asked if this is a bug that Microsoft will fix. If you read the article I mention above, it sure doesn't seem like they see it as a bug, but rather a change in behavior in the interests of security. I agree that making GP secure is critical to ensuring it can do it's job of, well, securing your Windows systems. I wish they had given a little bit more notice on this so it didn't break people's GP environments, but, hey, at least NOW we know :-).

If you have any feedback or questions on the script, feel free to email us at info@sdmsoftware.com

Darren

> Erik de Vries says:
>
> Changed it a little for to make it work in Server 2008(r2) :

```
$allGPOs = get-gpo –all
foreach ($gpo in $allGPOs)
{
# first read the GPO permissions to find out if Authn Users and Domain Computers is missing
$perm1 = Get-GPPermissions -Guid $gpo.id -TargetName “Authenticated Users” -TargetType group -ErrorAction
SilentlyContinue
$perm2 = Get-GPPermissions -Guid $gpo.id -TargetName “Domain Computers” -TargetType group -ErrorAction
SilentlyContinue
if ($perm1 -eq $null -and $perm2 -eq $null) # if no authn users or domain computers is found, then add Authn
Users read perm
{
Set-GPPermissions -Guid $gpo.Id -PermissionLevel GpoRead -TargetName “Authenticated Users” -TargetType Group
Write-Host $gpo.DisplayName “has been modified to grant Authenticated Users read access”
}

}
```