**Migrate Distribution Groups from Exchange On-Premise to Exchange Online**

**Prep**   1) Exchange On-Premise: export all information for distribution groups  
   2) Prepare and clean data, add columns that prepend “NEW” to avoid conflicts  
   3) Exchange Online: create “NEW” distribution groups, hide from GAL, and add members  
**Cutover**  
   4) Exchange On-Premise: delete distribution groups, and force AADSync  
   5) Exchange Online: rename distribution groups (remove “NEW”), unhide, and add SMTP aliases

Ok let’s start working through all the details. All output/input is in **c:\temp\dg** in my sample scripts.

# **Prep**

### Step 1 – Exchange On-Premise: export all information for distribution groups

**Exchange On-Premise: Export data**  
We’re going to export distribution groups, their settings, SMTP aliases, and members from Exchange On-Premise into three different files. Here are the PowerShell scripts you’ll need to run.

*#Get all groups into temp variable*

*$groups = Get-DistributionGroup -ResultSize Unlimited*

*#Export 1) ON-PREM export all distribution groups and a few settings*

*$groups | Select-Object RecipientTypeDetails,Name,Alias,DisplayName,PrimarySmtpAddress,@{name="SMTP Domain";expression={$\_.PrimarySmtpAddress.Domain}},MemberJoinRestriction,MemberDepartRestriction,RequireSenderAuthenticationEnabled,@{Name="ManagedBy";Expression={$\_.ManagedBy -join “;”}},@{name=”AcceptMessagesOnlyFrom”;expression={$\_.AcceptMessagesOnlyFrom -join “;”}},@{name=”AcceptMessagesOnlyFromDLMembers”;expression={$\_.AcceptMessagesOnlyFromDLMembers -join “;”}},@{name=”AcceptMessagesOnlyFromSendersOrMembers”;expression={$\_.AcceptMessagesOnlyFromSendersOrMembers -join “;”}},@{name=”ModeratedBy”;expression={$\_.ModeratedBy -join “;”}},@{name=”BypassModerationFromSendersOrMembers”;expression={$\_.BypassModerationFromSendersOrMembers -join “;”}},@{Name="GrantSendOnBehalfTo";Expression={$\_.GrantSendOnBehalfTo -join “;”}},ModerationEnabled,SendModerationNotifications,@{Name="EmailAddresses";Expression={$\_.EmailAddresses -join “;”}} | Export-Csv C:\temp\dg\distributiongroups.csv -NoTypeInformation*

*#Export 2) ON-PREM export distribution groups’ smtp aliases*

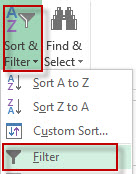
*$groups | Get-DistributionGroup -ResultSize Unlimited | Select-Object RecipientTypeDetails,PrimarySmtpAddress -ExpandProperty emailaddresses | select RecipientTypeDetails,PrimarySmtpAddress, @{name="SMTPALIAS";expression={$\_}} | Export-Csv C:\temp\dg\distributiongroups-SMTPproxy.csv -NoTypeInformation*

*#Export 3) ON-PREM export all distribution groups and members (and member type)*

*$groups |% {$GroupType=$\_.RecipientTypeDetails;$Name=$\_.Name;$SMTP=$\_.PrimarySmtpAddress ;Get-DistributionGroupMember -Identity $Name | Select-Object @{name=”GroupType”;expression={$GroupType}},@{name=”Group”;expression={$name}},@{name=”GroupSMTP”;expression={$SMTP}},@{name="SMTPDomain";expression={($SMTP).Split("@",2) | Select-Object -Index 1}},@{Label="Member";Expression={$\_.Name}},@{Label="MemberSMTP";Expression={$\_.PrimarySmtpAddress}},@{Label="MemberType";Expression={$\_.RecipientTypeDetails}}} | Export-Csv C:\temp\dg\distributiongroups-and-members.csv –NoTypeInformation*

### Step 2 – Prepare and clean data, add columns that prepend “NEW” to avoid conflicts

**Clean Files**  
Use exports from the previous step to prepare and clean data. I’m not a fan of manipulating data “on the fly” in PowerShell, because it’s nearly impossible roll-back quickly. I like to create CSV files that have both ‘old’ and ‘new’ data, which allows quick roll-back if necessary. It’s best to use Excel, since we can filter and use macros. When it’s time to delete data, delete cell contents rather than delete rows – this is due to limitations when using Excel ‘filters’.  After deleting data, remember to sort the columns which will remove blank rows.

[](http://blogs.catapultsystems.com/wp-content/uploads/filter.jpg)

1) Clean file from export 1 (Distribution Groups file, **distributiongroups.csv**)

Create “NEW” values. Insert columns after the following (**Name**, **Alias**,**DisplayName**, **PrimarySmtpAddress**), and prefix column header with “NEW” by using following formula. Then copy the formula down through data, so that all data is prefixed with “NEW”. You should now have the following columns (**Name**, NEWName, **Alias**, NEWAlias, **DisplayName**, NEWDisplayName,**PrimarySmtpAddress,**NEWPrimarySmtpAddress)

*="NEW"&A1*

Clean up any attribute that has a full path for a user account, most notably “**ManagedBy**“, **“AcceptMessagesOnlyFrom”, “AcceptMessagesOnlyFromDLMembers”, and“AcceptMessagesOnlyFromSendersOrMembers”**columns. Leave the semicolons in place and do NOT add quotes even though DisplayName values are being used (which contain spaces). You can use “Find and Replace”, CRTL+H to complete this task. You should note, if there are blank values altogether, you might want to specify a group admin, otherwise whoever creates the new groups in powershell will become the owner by default. This can be important if a group requires approval to add/remove members. **(e.g.:** contoso.local/User Accounts/USA/FTEmployees/Ryan Jackson; contoso.local/User Accounts/JPN/FTEmployees/Dave Rowe **—should become–>** Ryan Jackson;Dave Rowe**)**

**Note:** if you want to exclude mail-enabled security groups, filter columns, and in “RecipientTypeDetails” select rows with “MailUniversalSecurityGroup” and hit delete key.  
  
Save the csv file as **distributiongroups\_modified.csv**

2) Clean file from export 2 (SMTP Proxy/ALIAS file, **distributiongroups-SMTPproxy.csv**)

Let’s remove non-smtp addresses (e.g. X500), and Primary SMTP address, so we’re left with just alternate smtp aliases.

To remove non-smtp addresses, create TEMP1 column to help find only smtp addresses. Add heading “TEMP1″ and insert the following formula – this formula is not case sensitive. Once identified, filter data (see previous screenshot) and select “Not smtp”, then highlight data and hit delete key. Then view all results in filter, and sort to remove blank rows.

*=IF(ISNUMBER(SEARCH("smtp",C2)),"smtp", "Not smtp")*

 To remove primary smtp address, create TEMP2 column to help find primary smtp addresses. Add heading “TEMP2″ and insert the following formula – this formula is case sensitive, since we’re looking for SMTP and not smtp. Once identified, filter data (see previous screenshot) and select “Primary smtp”, then highlight data and hit delete key. Then view all results in filter, and sort to remove blank rows.

*=IF(ISNUMBER(FIND("SMTP",C2)),"Primary smtp", "Alias smtp")*

 As long as there are no uppercase “SMTP:” preceding the smtp aliases, you are good to go. If you want, you can remove “smtp:” prefix from all smtp aliases. Highlight entire column “SMTPALIAS” and press CNTL+H to open ‘Find and Replace’. In ‘Find What’ text-box type “smtp:” without quotes and leave ‘Replace with’ blank, then click ‘Replace All’ button.  
  
Save the csv file as **distributiongroups-SMTPproxy\_modified.csv**

 3) Clean file from export 3 (Distribution Groups and Members file,**distributiongroups-and-members.csv**)

This section will fix nested-groups since they are members. In the export you can verify if any nested-groups exist. If no nested-groups exist, then just copy previous values in new columns.

Create “NEW” values. Insert columns after the following (**Group, GroupSMTP**), and prefix column header with “NEW” by using following formula. Then copy the formula down through data, so that all data is prefixed with “NEW”. You should now have the following columns (**Group,** NEWGroup, **GroupSMTP**, NEWGroupSMTP)

*="NEW"&A1*

Create “NEW” values for nested group-members only, and use previous values for user members. Copy the entire column from “MemberSMTP” and insert as new column right next to it, then rename column header to “NEWMemberSMTP”. You should now have the following columns (**MemberSMTP,** NEWMemberSMTP). Now filter data (see previous screenshot) and go to “RecipientTypeDetails” column and select the following values (MailUniversalDistributionGroup, DynamicDistributionGroup, MailUniversalSecurityGroup) and unselect the rest. Now you should only see nested groups in “NEWMemberSMTP” column. Replace the value with the following formula (depending on where first cell is, modify formula to that cell), and copy formula to rest of cells that are displayed. This ensures the nested groups are updated with “NEW”.

*="NEW"&D27*

**Note:** if you excluded mail-enabled security groups from distributiongroups\_modified.csv, you might consider also removing from this file too. Otherwise you’ll see errors when trying to add members to groups that don’t exist.  Filter columns, and in “GroupType” select rows with “MailUniversalSecurityGroup” and hit delete key.  
   
Save the csv file as **distributiongroups-and-members\_modified.csv**

### Step 3 – Exchange Online: create “NEW” distribution groups, hide from GAL, and add members

**Exchange Online: Create Groups**Let’s create the new distribution groups (and security groups if included) and hide from GAL in Exchange Online. We’ll use one of the files we cleaned up earlier (distributiongroups\_modified.csv). Take note, if a group did not have a previous owner (ManagedBy), then whoever creates the distribution group in PowerShell will be the owner by default.

*Import-Csv C:\temp\dg\distributiongroups\_modified.csv | ForEach-Object{*

*$RecipientTypeDetails=$\_.RecipientTypeDetails*

*$Name=$\_.NEWName*

*$Alias=$\_.NEWAlias*

*$DisplayName=$\_.NEWDisplayName*

*$smtp=$\_.NEWPrimarySmtpAddress*

*$RequireSenderAuthenticationEnabled=[System.Convert]::ToBoolean($\_.RequireSenderAuthenticationEnabled)*

*$join=$\_.MemberJoinRestriction*

*$depart=$\_.MemberDepartRestriction*

*$ManagedBy=$\_.ManagedBy -split ';'*

*$AcceptMessagesOnlyFrom=$\_.AcceptMessagesOnlyFrom -split ';'*

*$AcceptMessagesOnlyFromDLMembers=$\_.AcceptMessagesOnlyFromDLMembers -split ';'*

*$AcceptMessagesOnlyFromSendersOrMembers=$\_.AcceptMessagesOnlyFromSendersOrMembers -split ';'*

*if ($RecipientTypeDetails -eq "MailUniversalSecurityGroup")*

*{*

*if ($ManagedBy)*

*{*

*New-DistributionGroup -Type security -Name $Name -Alias $Alias -DisplayName $DisplayName -PrimarySmtpAddress $smtp -RequireSenderAuthenticationEnabled $RequireSenderAuthenticationEnabled -MemberJoinRestriction $join -MemberDepartRestriction $depart -ManagedBy $ManagedBy*

*Start-Sleep -s 10*

*Set-DistributionGroup -Identity $Name -HiddenFromAddressListsEnabled $true*

*}*

*Else*

*{*

*New-DistributionGroup -Type security -Name $Name -Alias $Alias -DisplayName $DisplayName -PrimarySmtpAddress $smtp -RequireSenderAuthenticationEnabled $RequireSenderAuthenticationEnabled -MemberJoinRestriction $join -MemberDepartRestriction $depart*

*Start-Sleep -s 10*

*Set-DistributionGroup -Identity $Name -HiddenFromAddressListsEnabled $true*

*}*

*}*

*if ($RecipientTypeDetails -eq "MailUniversalDistributionGroup")*

*{*

*if ($ManagedBy)*

*{*

*New-DistributionGroup -Name $Name -Alias $Alias -DisplayName $DisplayName -PrimarySmtpAddress $smtp -RequireSenderAuthenticationEnabled $RequireSenderAuthenticationEnabled -MemberJoinRestriction $join -MemberDepartRestriction $depart -ManagedBy $ManagedBy*

*Start-Sleep -s 10*

*Set-DistributionGroup -Identity $Name -HiddenFromAddressListsEnabled $true*

*}*

*Else*

*{*

*New-DistributionGroup -Name $Name -Alias $Alias -DisplayName $DisplayName -PrimarySmtpAddress $smtp -RequireSenderAuthenticationEnabled $RequireSenderAuthenticationEnabled -MemberJoinRestriction $join -MemberDepartRestriction $depart*

*Start-Sleep -s 10*

*Set-DistributionGroup -Identity $Name -HiddenFromAddressListsEnabled $true*

*}*

*}*

*if ($AcceptMessagesOnlyFrom) {Set-DistributionGroup -Identity $Name -AcceptMessagesOnlyFrom $AcceptMessagesOnlyFrom}*

*if ($AcceptMessagesOnlyFromDLMembers) {Set-DistributionGroup -Identity $Name -AcceptMessagesOnlyFromDLMembers $AcceptMessagesOnlyFromDLMembers}*

*if ($AcceptMessagesOnlyFromSendersOrMembers) {Set-DistributionGroup -Identity $Name -AcceptMessagesOnlyFromSendersOrMembers $AcceptMessagesOnlyFromSendersOrMembers}*

*}*

**Exchange Online: Add Members to Groups**After we’ve created the distribution groups, we can now add members. We’ll use the file (distributiongroups-and-members\_modified.csv) to complete this task.

*Import-Csv C:\temp\dg\distributiongroups-and-members\_modfied.csv | ForEach-Object{*

*$RecipientTypeDetails=$\_.GroupType*

*$GroupSMTP=$\_.NEWGroupSMTP*

*$MemberSMTP=$\_.NEWMemberSMTP*

*if ($RecipientTypeDetails -eq "MailUniversalSecurityGroup")*

*{*

*Add-DistributionGroupMember -Identity $GroupSMTP -Member $MemberSMTP -BypassSecurityGroupManagerCheck*

*}*

*if ($RecipientTypeDetails -eq "MailUniversalDistributionGroup")*

*{*

*Add-DistributionGroupMember -Identity $GroupSMTP -Member $MemberSMTP*

*}*

*}*

# **Cutover**

### Step 4 – Exchange On-Premise: delete distribution groups, and force sync

**Exchange On-Premise: Delete groups**You’ll run the following script on your Exchange server that is On-Premise. Although we’ve taken precautions to minimize impact, it’s best to do this (and remaining) steps at off-peak hours (like Friday night). We’ll use the file (distributiongroups\_modified.csv) to complete this task.

*$OLDDG = Import-Csv C:\temp\dg\distributiongroups\_modified.csv*

*$OLDDG | % {Remove-DistributionGroup -Identity $\_.PrimarySmtpAddress -Confirm:$false}*

**AADSync / AAD Connect: Force synchronization**In order to speed things up, you’ll want to force delta syncs (a few) on the AADSync / AD Connect server. This will ensure the old distribution groups (On-Premise) are no longer visible in Exchange Online. You can do this directly on the AADSync / AD Connect server with miisclient.exe or use the following PowerShell command from a remote machine on the same network. You must be an administrator on the server and in AADSync / AD Connect local admin group (FIMSyncAdmins). Make sure to insert your AADSync / AD Connect server name in PowerShell. (***Note***: Latest version of AAD Connect has PowerShell)

*#New AD Connect (as of 3/29/2016)*

*Invoke-Command -ComputerName AD-CONNECT-SERVER {Start-ADSyncSyncCycle -PolicyType Delta}*

*#Old AD Connect or AADSync*

*Get-ScheduledTask -TaskName "Azure AD Sync Scheduler" -CimSession AADSYNC-SERVER-NAME-HERE | Start-ScheduledTask*

### Step 5 – Exchange Online: rename distribution groups (remove “NEW”), unhide, and add SMTP aliases

**Exchange Online: Rename distribution groups and unhide**  
After you’ve validated the old distribution groups are no longer visible in Exchange Online, we can now unhide the new ones and remove “NEW” from the names. We’ll use the file (distributiongroups\_modified.csv) to complete this task.

*$RENAMEDG = Import-Csv C:\temp\dg\distributiongroups\_modified.csv*

*$RENAMEDG | % {Set-DistributionGroup -Identity $\_.NEWName -Name $\_.Name -Alias $\_.Alias -DisplayName $\_.DisplayName -PrimarySmtpAddress $\_.PrimarySmtpAddress -HiddenFromAddressListsEnabled $false}*

**Exchange Online: Remove NEWPrimarySmtpAddress from -EmailAddresses for all Groups**Since the previous step just moves “NEWPrimarySmtpAddress” into an alternate smtp alias, we can now remove it. We’ll use the file (distributiongroups\_modified.csv) to complete this task.

*$RemoveNEWGrouptSMTP = Import-Csv C:\temp\dg\distributiongroups\_modified.csv*

*$RemoveNEWGrouptSMTP | % {Set-DistributionGroup -Identity $\_.PrimarySmtpAddress -EmailAddresses @{remove=$\_.NEWPrimarySmtpAddress}}*

**Exchange Online: Add SMTP Aliases**Last thing to do is add the SMTP aliases in Exchange Online, if any.

*$SMTPALIAS = Import-Csv C:\temp\dg\distributiongroups-SMTPproxy\_modified.csv*

*$SMTPALIAS | % {Set-DistributionGroup -Identity $\_.PrimarySmtpAddress -EmailAddresses @{Add=$\_.SMTPALIAS}}*