Direct Routing

Standard Configuration Summary

This information is not intended to be comprehensive and is subject to change, including as a result of changes to Microsoft's software or licences. When using this information you should ensure that you are familiar with the latest version of Microsoft Teams, Office365 and any other relevant software as well as any guidance issued by Microsoft.

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1.   Overview

This document provides detail of the standard deployment configuration settings for the Virgin Media Business Direct Routing service.

Regardless of the deployment option taken, separate and in addition to any customised configuration settings made i.e. more complex dial plans, it is expected that these standard settings will be configured and maintained in your Microsoft 365 Tenant at all times.

This provides a point of reference whereby should any testing need to be undertaken, a user can quickly be granted access to the standard configuration. Being able to quickly isolate and test the service allows us to verify as quickly as possible whether any fault, error, or service failure is caused by the Direct Routing service, or the fault lies elsewhere allowing the speedy resolution of any issues.

If you have taken the Standard deployment option or asked us to set up the Direct Routing service as part of a Tailored deployment option, we will configure these standard settings for you in your Microsoft 365 tenant as part of that deployment.

From time to time there may be a need to update the settings and cmdlets based on any changes made by Microsoft so please check to ensure you are working with the latest version of this document.

2.   Pre-requisites

This configuration guide outlines the steps to add the Direct Routing service to your Microsoft 365 Tenant and Microsoft Teams. It also provides guidance on how to add the Direct Routing service for a user along with some simple test steps for that user.

To be able to run any of the following cmdlets and/or check any Direct Routing settings you will need the following:

- To have a Microsoft 365 Admin user account that has been granted Teams Administrator rights

- Be running PowerShell 5.1 or higher on your PC

- To have the Teams PowerShell module installed

- Be able to connect to your Microsoft Teams instance using PowerShell and the installed Teams module.

- Hold sufficient technical knowledge and administrative access to your infrastructure and applicable Microsoft software i.e. PowerShell and the Teams PowerShell module

To check user settings and/or test the user, access to a Microsoft Teams user with either an E5 or E3 and phone system license is needed

Should you need any further information, please refer to the [Microsoft PowerShell support pages](https://docs.microsoft.com/en-us/microsoftteams/teams-powershell-install) which can be found at https://docs.microsoft.com/en-us/microsoftteams/teams-powershell-install

3. Virgin Media Direct Routing Standard Configuration

Below are listed the cmdlets and associated configuration settings for the Virgin Media Standard Direct Routing service.

Running each of the cmdlets listed below will generate a command output summary for your Microsoft Tenant.

Direct Routing Service Configuration cmdlets

Feature	Description
PSTN Usage	VirginMediaBusiness-PU-ALL
Voice Routing	VirginMediaBusiness-VR-ALL.
Voice Routing Policy	VirginMediaBusiness-VRP-ALL
Dial Plan	VirginMediaBusiness-TDP-ALL

The values returned when running each cmdlet for your Microsoft 365 Tenant can be checked against the Virgin Media standard default values as displayed below for each of the cmdlets to ensure they match.

PSTN Usage

The Get-csOnlinePSTNUsage command will display all the PSTN Usages configured on the system. Ensure that as a minimum you have "VirginMediaBusiness-PU-ALL" PSTN usage in the list.

```
PS C:\> Get-CsOnlinePstnUsage

Identity        : Global
Usage           : {Test-VirginMediaBusiness-PU-ALL, VirginMediaBusinessTest2-PU-ALL,
VirginMediaBusiness-PU-ALL}
```

Microsoft Teams Direct Routing

Voice Routing

Running the CSOnlineVoiceRoute cmdlet should return the data as displayed below. The only exception will be for the OnlinePstnGatewaytList as this is based on the names of the domains you have added to your Microsoft 365 tenant for the Direct Routing Session Border Controllers (SBCs). This means that under OnlinePstnGatewaytList: the "PR88888888" reference for each gateway listed should return your unique domain identifier that corresponds to the Domains added to your Microsoft 365 tenant.

```
PS C:\> Get-CSOnlineVoiceRoute -Identity "VirginMediaBusiness-VR-ALL"


Identity                    : VirginMediaBusiness-VR-ALL
Priority                    : 0
Description                 :
NumberPattern               : .*
OnlinePstnUsages            : {VirginMediaBusiness-PU-ALL}
OnlinePstnGatewayList       : {PR88888888.drsip1.VirginMediaBusinessvoice.co.uk,
PR88888888.drsip2.VirginMediaBusinessvoice.co.uk}
Name                        : VirginMediaBusiness-VR-ALL
```

Voice Routing Policy

```
PS C:\> Get-CsOnlineVoiceRoutingPolicy -Identity "VirginMediaBusiness-VRP-ALL"


Identity                    : Tag:VirginMediaBusiness-VRP-ALL
OnlinePstnUsages            : {VirginMediaBusiness-PU-ALL}
Description                 :
RouteType                   : BYOT
```

Dial Plan

It is important that the Virgin Media Standard Dial Plan only includes the following data without modification. If alternative or additional rules are required, separate Dial Plans should be created and assigned.

```
C:\> Get-CsTenantDialPlan -Identity Tag:VirginMediaBusiness-TDP-ALL


Identity                    : Tag:VirginMediaBusiness-TDP-ALL
Description                 : Default Normalization rules for Virgin Media Business
NormalizationRules          : {Description=Normalisation – International Dialling;Pattern=^00([1-
9]\d*);Translation=+$1;Name=International;IsInternalExtension=False, Description=Normalisation -
National Dialling;Pattern=^0([1-9]\d*);Translation=+44$1;Name=National;IsInternalExtension=False,
Description=Normalisation - UK Service Codes (incl. 999, 100 etc.);Pattern=^[1-
9]\d*;Translation=$0;Name=UK Services;IsInternalExtension=False}
ExternalAccessPrefix        :
SimpleName                  : VirginMediaBusiness-TDP-ALL
OptimizeDeviceDialing       : False
```

4. Checking Users

To check whether a User is configured for the Virgin Media Standard Direct Routing configuration, please run the cmdlet below.

Ensure you replace the name of the user shown below "Tom Smith" for one of the existing users in your tenant.

The output for DisplayName, SipAddress and LineURI should reflect the user you are checking and will not be as below.

Note*:*

It's important that the user being tested has the correct Microsoft 365 licenses assigned.

```
PS C:\> Get-CsOnlineUser -Identity "Joe Brown" | Select-Object DisplayName, SipAddress,
EnterpriseVoiceEnabled, LineURI, TenantDialplan, OnlineVoiceRoutingPolicy,
TeamsUpgradeEffectiveMode, HostingProvider

DisplayName                      : Joe Brown
SipAddress                       : sip:JoeBrown@DRDemo1.onmicrosoft.com
EnterpriseVoiceEnabled           : True
LineURI                          : tel:+44123456789
TenantDialPlan                   : Test-VirginMediaBusiness-TDP-ALL
OnlineVoiceRoutingPolicy         : Test-VirginMediaBusiness-VRP-ALL
TeamsUpgradeEffectiveMode        : TeamsOnly
HostingProvider                  : sipfed.online.lync.com
```

5. Service Validation

As soon as the default Standard Direct Routing service has been configured and assigned to two Users, we recommend as a minimum that Tests 1, 2 & 3 listed below are completed.

We also recommend that these simple Service Validation tests are carried out before making any further configuration changes or adding any remaining users. This will confirm that the Direct Routing service setup is complete, working and ready for full User provisioning along with any remaining customisation as required.

To validate the service, please follow the test steps below:

Note*:*

Once a user has been enabled with enterprise voice, Microsoft will update the user attributes on Azure AD and within their infrastructure. This can take anywhere from one to 72 hours. Usually, the attributes are updated within the hour.

Test 1 – Check for Dialpad Option

When the User signs into their Microsoft Teams client they should see the calls option on left hand side navigation (see image 1 below).
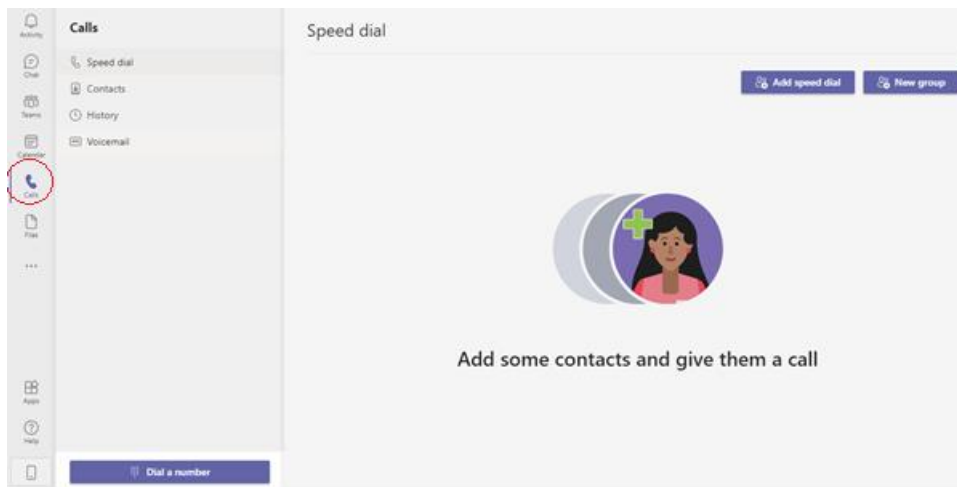

Image 1

If they select and click on the Calls option, they should see the dial pad with the telephone number they have been assigned (see image 2 below).
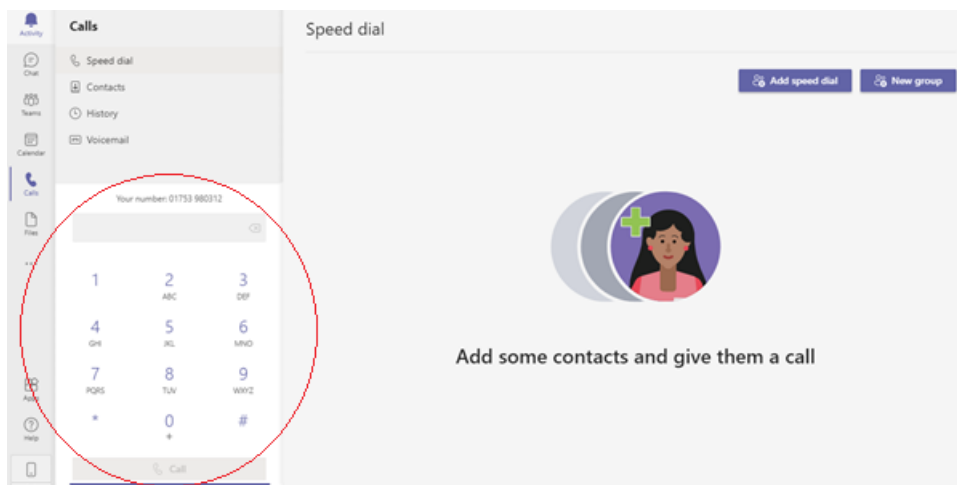

Image 2

Images 1 and 2 are for reference only. The user interface may differ depending on the users Teams client version and/or any Microsoft updates.

Test 2 – Make an Outbound external PSTN Call

From the Teams client make an outbound external call to a landline or mobile number. Ensure that the call connects, and you have two-way audio.

Test 3 – Make an Inbound external PSTN Call

From a mobile device or landline, generate an inbound call to the Teams User's Direct Routing telephone number. Ensure the call can be established with two-way audio.

Once you have successfully completed the above tests your service is ready for your Users to be added. As you add your Users, or should any further service configuration be added, additional validation and test steps should be carried out to check those changes.

Should you find you require further assistance deploying the Virgin Media Business Direct Routing service, please contact your order manager. If this results in the need for any additional professional services, charges may be incurred.

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Thank you

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