eduroam IT Support staff trouble shooting flowchart

This document is intended to serve as an aid for IT support staff at organisations providing eduroam in troubleshooting problems being experienced by users. It is assumed that the organisation provides both a Home (ID Provider) and Visited (Service Provider) services. It is split into two parts. The first part, 'Remote user issues', looks at problems your users may be experiencing at a remote site. The second part, 'Visitor issues', looks at visitor authentication. Please note, for successful troubleshooting you must be able to tick off the conditions in the 'Prerequisites' box.

Prerequisites
- Your ORPS must be registered on the JRS Support Server and correctly peered with the JRS NRPS.
- Access to the system administrators of your organisation's ORPS and firewall to allow inspection of logs and request possible configuration changes.
- Ability to log in to the JRS Support Server to access the diagnostic tests.

The following measures are recommended to ensure basic configuration issues are avoided

- Use of a deployment tool to configure the supplicant on users' devices with the required 802.1X configuration and settings – eg SU1X or Cloudpath XpressConnect
- Implementation of local username policy on your RADIUS server that username must contain a '@ realm' component.

- If local policy does not provide for a full eduroam service to be available for the organisation's own staff and students, the local eduroam network should however still be available for test purposes by local users and it is recommended that it should at least result in them being placed on a limited network and being directed to a page presenting a 'congratulations your eduroam setup is working' message.

Remote user issues

Issue 1: Remote user cannot authenticate at a visited site and Access-Requests are not being received

Comment: Do your logs show any authentication attempts by the remote user? Do you see any incoming Access-Requests to your ORPS from the NRPS?

Fix: Check to see if the remote user authentication test on the JRS support server works for your site and you see the requests appearing in your ORPS activity log. a) If the test works, this indicates that the problem lies with the client and the cause will be a supplicant configuration error, incorrect user/password settings or alternatively that there is a problem with the eduroam implementation at the site the user is visiting (but the latter should have already been detected). b) If the test fails, then check your firewall (border, router ACL or host etc.) to ensure that access-requests can reach your ORPS. If the request comes through but fails, go to Issue 2.

Issue 2: Remote user cannot authenticate but you see the Access-Request come through

Comment: Traffic is getting to your RADIUS server, but authentication to your ORPS is not being processed/fails in the latter stages.

Fix: a) Check all of the shared secrets on all your ORPS. Inspect the RADIUS logs (may need to run in higher debug mode). b) The client may not be correctly configured – check user/password settings. Nb authentication often fails on the Challenge-Response part indicating certificate problems.

Alternative fix: Your ORPS isn't sending back the necessary attributes. Check the JRS Tech Spec for all the RADIUS attributes that must be in the packets – don't filter any of these.

Issue 3: Remote user authenticates (logs show this) but remote user doesn't get any network.

Comment: All looking okay locally in the logs – you send back an 'Access-Accept'

Fix: Are you also sending back spurious attributes in the response (e.g. VLAN attributes)? The remote site may not be filtering these and this may cause all sorts of issues at the remote site. Please try to be a nice neighbour and don't send back any local attributes to requests that come from the NRPS. You must correctly set up attribute filtering on your ORPS.

Alternative fix: Your ORPS isn't sending back the necessary attributes. Check the JRS Tech Spec for all the RADIUS attributes that must be in the packets – don't filter any of these.

Visitor issues

(Note: eduroam service guidance states that "the user's Home site should be the first point of contact for a user experiencing difficulties. However please note that the Visited site may be requested to assist by JSD/JANET Roaming Support or the Home site's IT Services team.)

Issue 1: Visitor cannot authenticate due to user device basic configuration error

Comment: This check will require physical access to the user's system/device

Fix: Check that the settings on the user's device are correct (e.g. WLAN ciphers, EAP, certificate) and whether their username follows the required standard (user@site.ac.uk). EAP and certificate settings will need to be cross-checked against the Home site eduroam configuration pages (e.g. whether they use MSCHAPv2/PEAPv0 or EAP-TTLS/PAP etc.) and what certificate to use.

Issue 2: Visitor cannot authenticate due to RADIUS problems

Comment: Deeper RADIUS problems can often be revealed by looking in RADIUS and firewall logs. Do you see the user authentication attempt in the logs? Does the request go to the NRPS?

Fix: a) If visitor authentication fails because of no realm, the credentials on the user's device need to be configured correctly. b) If the request gets sent to the NRPS then you need to run a 'simulated visitor test' at www.ja.net/services/authentication-and-authorisation/janet-roaming/implementing-jrs.html#test_facilities to check that your eduroam system and the JRS infrastructure is working properly. You possibly need the JRS site administrator to be involved here (unless they have provided a preconfigured test device or web page test)

Further comment: If the request goes to the NRPS and the simulated visitor test passes, this indicates that the problem is somewhere else in the chain – e.g. at their Home site. There is nothing that can be done further locally at this point. The user should be referred to their Home site for support.