

Meeting Venue
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**IETF Meeting Network and Other Technical Requirements
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Abstract

This document describe the minimum technical requirements for a facility to be able to host a successful IETF meeting. Includes also requirements for the terminal room and other technical requirements.

This documents should be used as the minimum criteria during an on-site facility survey, to ensure the fulfilment of the IETF meeting needs.

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1. Introduction

This document describes network, terminal room and other technical criteria for the IETF facility selection process, including some details related to the planning. All this details are required in order to accommodate the IETF meeting with technical guarantees of successful working capabilities for the attendees, as a result of previous experience and considering possible new future news in the medium term.

This document lists what needs to be evaluated and various alternative solutions, or combinations thereof, that may apply. The document shall be used in several steps of the venue/facility selection:

- o Pre-on-site survey: Before a facility is qualified, from the technical perspective, for a possible on-site visit, and when non-technical requirements (such as venue requirements and facility meeting space availability) seem to be met already, in order to pre-evaluate that the technical requirements could also be satisfied.
- o On-site survey: Experience shows that an on-site survey of the facility MUST be organized, typically in conjunction with a general on-site survey for ensuring that both technical and non-

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technical meeting requirements are met. The participation of a local IETF participant together with the NOC team may be very relevant, in order to ensure that as much information as possible is collected in advance, to facilitate communication issues, and specially to make sure that the all the facility relevant staff is present during the on-site survey.

- o Pre-meeting: If a facility has been already selected/contracted, around 1-2 months before the actual meeting, a new on-site visit is organized which allows a very detailed scrutiny to nail down possible issues or needs, as well as connecting already an IETF managed router to the Internet upstreams, allowing announcing the IETF networks and doing some remote testing to facilitate resolving any possible issues before the actual meeting.

Only if the pre-on-site-survey seems to indicate that the facility match the IETF technical requirements, then the on-site-survey will be organized. In some cases, where several facilities are in the same venue or in a convenient distance, it may make sense to organize also on-site technical surveys for several facilities.

Experience shows that things could go wrong when there is too strict a dependence on specific people or equipment and when no alternatives are provisioned for. Consequently, contingencies are a very important consideration across all the process.

2. Facility General Technical Requirements

The facility being evaluated for hosting IETF, should comply with several generic technical requirements, which will allow an adequate installation of the network, terminal room and some other relevant technical details. The facility chosen can have a dramatic impact on the ability to deliver a quality network to attendees, so the general requirements of this section are of key importance:

- o MUST have a Telecommunications rooms and/or equivalent spaces (cabinets, etc.). They MUST be secured and provide a mechanism for 24-hours access to the NOC team, even during the network setup.
- o MUST have adequate ventilation to support the equipment rooms and the terminal room.
- o SHOULD have as much physical separation as possible in the meeting room area to improve the RF environment.
- o SOULD avoid air-walls and similar partitions systems, between meeting rooms, with low RF attenuation in the 2.4MHz spectrum.

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- o SOULD provide a RF environment in all the meeting rooms to be used by IETF, common spaces, terminal room and registration area, that has a reasonable noise floor in the 2.4MHz spectrum.
- o SHOULD provide an appropriate wiring plan (power and data) in order to know the existing infrastructure (fiber, connectors, UTP category/distances) and what can be used, what not, what can be done with it, etc.
- o SHOULD have installed network cabling which can be used to deploy the IETF network, either by spare fiber pairs (other options may be possible), by sharing by means of VLANs/other means, or by providing exclusive usage to those fibers for the IETF network. The number of fibers required across the facility depends on the physical allocation of the meeting space, distribution structure in different buildings/floors, etc. Some facilities have no wiring and that could be an important inconvenient, especially in order to quickly deploy the wireless network. Feasibility/facility to setup new cables (fiber/UTP) MUST be considered.
- o Roof access, in case a WLAN link is required, MUST be provided.
- o If there is already a WLAN in the facility, SOULD be possible to turn it off at the meeting space area, otherwise dependencies to temperature, lighting, security, access control, POS and other systems MUST be properly evaluated.
- o MUST have electrical power capacity to support the IETF equipment and terminal room needs.
- o MUST have electrical power capacity to support the IETF network and its users, including 110/220 VAC in cabinets, roof locations, public areas and back-of-the-house areas.
- o 24 hours' power SOULD be available by means of UPS power to support key network infrastructure, such as core routers and switches and other devices required for the external connectivity.
- o In venues where power is expected fo fail, UPS power should cover beamers, audio equipment, remote participation equipment and the complete wired and wireless network, at least for the average expected failure time per day.
- o Facilities for AV SHOULD be convenient for the IETF needs: room dimensions for screens (height/width).
- o SHOULD allow the use of wireless voice communication ("Walkie Talkies" or hand-held radios). In some cases the secretariat can

bring its own equipment, but in some occasions it is required to be rented from the hotel.

3. Internet Upstream

- o The facility **MUST** have good network connectivity, with at least two different providers (main one and backup). Ideally this **SHOULD** be achieved by means of two fibers with different (physical and logical) paths. A single provider may work with two diverse paths all the way thru different subsequent upstream providers.
- o IETF network **SHOULD** be able to run their own BGP, so the different links can be aggregated or load-balanced.
- o The primary link **MUST** provide a minimum of 1 Gbit (symmetric). However, higher capacity may be appropriate in the future (10 Gbits can be expected as something common in a couple of years).
- o The backup link(s) **SHOULD** provide a minimum of 100 Mbit (symmetric). However, higher capacity may be appropriate in the future (1 Gbit).
- o Native IPv6 unicast **MUST** be available. IPv6 Multicast **SHOULD** be available.
- o IPv4 unicast and IPv4 multicast **SHOULD** be available, either natively or by means of a tunnel.
- o The upstream providers **MUST** provide access to the IPv4 and IPv6 default free zones without any kind of filtering or ACLs. Consequently **MUST NOT** prohibit end-to-end connectivity to any external sites.
- o The IETF **SHOULD** be able to use its own AS, IPv4 and IPv6 addressing space. Otherwise, the upstream provider **MUST** supply an AS, an IPv4 /19, IPv6 /32 and reverse DNS delegation for that addressing space.

4. Wired Network

- o Wired links **MUST** be available for the registration desk/secretariat with configuration to support the registration desk firewall requirements.
- o Wired links **MUST** be available in every meeting room which require network for audio/video as required for remote participation and/or recording. Wired connectivity for chairs **SHOULD** be available.

- o Separate VLANs for wired-terminal room, wired-registration desk/secretariat, wired-remote participation and wireless traffic, MUST be supported.
- o MUST support IPv6.
- o MUST allow end-to-end connectivity, so MUST NOT have any kind of filtering.
- o SHOULD support multicast (multicast is not currently used to support remote participation, but it may change at any point).
- o SHOULD support mechanisms for detecting and mitigating rogue protocols/servers (IPv6 RA's, DHCP, etc.).

5. Wireless Network

- o The network MUST provide IEEE 802.11a/b/g service in all the meeting rooms (as identified by the Secretariat), the registration area, the terminal room and common/gathering areas.
- o The WLAN coverage SHOULD also be sufficient in additional common spaces including lobby, bar(s), restaurant(s), most commonly used hallways, etc. This is applicable to the main conference center and/or the main hotel(s), depending on the specific venue.
- o IEEE 802.11n/ac coverage SHOULD be also available in as many as the above named spaces as possible, focusing on the most dense user density (plenary meeting room) first.
- o The WLAN design MUST anticipate 200% usage according to the historical figures of participants in each meeting room, assuming that average attendee uses two devices.
- o MUST support separate SSIDs for different specific VLANs (2.4GHz, 5GHz, NAT64, etc.).
- o The main(s) hotel(s) SHOULD support the IETF-hotel SSID. This SHOULD be supported by means of a specific IETF provided VLAN.
- o The WLAN MUST provide fully open (unsecured) wireless access and SHOULD provide additional secured (WEP, 802.11i, WPA) services.
- o MUST support IPv6.
- o SHOULD support mechanisms for detecting and mitigating rogue APs.

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6. Network Services

- o The network MUST provide local redundant DNS servers (IPv4 and IPv6).
- o The network MUST provide redundant DHCP (IPv4) servers.
- o The network SHOULD provide redundant DHCPv6 servers.
- o The network MUST provide SMTP server (IPv4 and IPv6).
- o The network SHOULD provide a full on-site mirror of the RFC and I-Ds directories (FTP/WWW, both IPv4 and IPv6).
- o IDS and other security issues SHOULD be covered (IPv4 and IPv6).
- o The network SHOULD provide NTP services (IPv4 and IPv6).
- o A pool of IP addresses for static assignment, even if discouraged to use, SHOULD be available (IPv4 and IPv6).
- o Printing services MUST support IPP and SHOULD support LPD/LPR and Windows specific protocols (IPv4 and IPv6).

7. Terminal Room

- o A terminal room or equivalent MUST be provided. It MAY be a single room or a set of smaller ones distributed nearby the meeting rooms.
- o SHOULD be accessible 24 hours, however help-desk staff MAY not be available all the time.
- o SHOULD have adequate number of 10/100 Ethernet RJ-45 ports/drops.
- o Two printers MUST be available. They SHOULD have duplex capability.
- o A color printer MAY be available.
- o Power strips MUST be provided.
- o A help-desk SHOULD be available.
- o The upstream provider SHOULD provide a trouble ticket system to track participants network issues. This system SHOULD be accessible to the help-desk and NOC staff.

8. NOC and Network Monitoring

A support group or NOC, is responsible to manage the network and other technical issues, including concrete aspects such as:

- o Setup and maintain a meeting NOC web page with all the required information.
- o Document what can be wrong with the WLAN to inform users (FAQs). Provide a document to attendees detailing configuration information (wireless, services such as printing/SMTP) on-site and prior to the meeting if possible (IETF meeting web site and NOC meeting web site).
- o Make sure to test the network under heavy load.
- o Primary and backup contacts for all the issues/topics should be available.
- o Provide stats and info on network status.
- o WLAN expertise and debugging/monitoring is required.
- o SHOULD provide a white board with the stats and network status, in visible place, possibly in the terminal room and by means of a participants accesible web page.

To cover the issues indicated above and ensure network performance, the NOC will use common network monitoring tools:

- o The network MUST provide sufficient monitoring to ensure the expected availability/performance and to detect possible faults before they impact users experience.
- o The network MUST collect data for future use and adequate provisioning of following meetings network.
- o The upstream providers SHOULD provide SNMP read-only access to the network devices for the NOC.

9. Other Technical Criteria

Sufficient power strips MUST be available in the meeting rooms. Additional power strips also should be available in common gathering areas.

Attendees SHOULD be notified of power connector requirements prior to the meeting (via the IETF meeting web page and IETF-announce mailing

list, possibly also via the meeting NOC web page).

The upstream provider SHOULD maintain spares of critical network components on-site.

TBD. Audio requirements needed. There is a disparity of audio quality from meeting to meeting.

10. Multi-property/building meetings

It should be noted that in some situations, the facility may be composed of several buildings/properties, such as a main hotel (the one with the meeting rooms) and secondary ones, or a conference center and one or several hotels.

This may imply that the technical requirements in this document shall be met by at least by the building actually hosting the meeting rooms, however a subset of the requirements may be also relevant for the main hotel or even several of them.

For example, it is desirable that the main facility is connected with a direct optic fiber to other facilities (secondary hotels). This is key in case the main facility is a conference center and there is a main hotel or several ones. This will allow probably setting up in one or several hotels the IETF-hotel SSID providing adequate bandwidth for our needs.

There are alternative solutions, such as ensuring that the hotels have sufficient bandwidth even if they aren't connected to the IETF network, and the difficulty is to define strict requirements for each of the possible cases. However, the spirit of our needs in case there is not a "main hotel" being the same facility as the meeting rooms facility, should be considered by the on-site-survey team report in order to ensure a close match with our needs.

11. Technical Risks and Contingencies

TBD.

12. Timing and Planning

Typically the pre-on-site survey is done by an email questionnaire filled by the facility or even an phone/audio interview. This SHOULD take place several years (around 3) before a possible on-site survey is decided for that venue.

The on-site survey MUST take place at least 2-3 years in advance of a possible contract. Whenever possible, several facilities in that

venue MAY be surveyed in a single trip.

The pre-meeting survey MUST take place 1-2 months in advance of the actual meeting, in order to confirm some technical aspects and deploy a router for some remote testing and monitoring.

13. Venue Acceptance/Rejection Report

After the on-site survey, the team responsible for that visit will provide a complete report to the IAOC meetings committee. This report will provide inputs regarding both, the venue and the visited facilities. Only those facilities that MAY qualify will be ranked by the survey team.

The report MUST include non only technical aspects but also others related to the venue-selection-process itself, from both the venue and the ranked facilities.

14. Security Considerations

This document does not have any protocol-related security considerations.

15. IANA Considerations

This document does not have any specific IANA considerations.

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