In-Building WiFi and Ethernet Networks

Service Level Expectations

Service Definition

Service Description
The in-building network service provides operation, administration, maintenance, software upgrades, and repair of standard wired (Ethernet) and wireless (WiFi) infrastructure for the people and devices in the building. It also provides for routine additions and changes to the service. Wired service is available at data outlets in offices, classrooms, lab spaces, and other areas as necessary. The in-building network will connect to the campus backbone network at 1Gbps or higher.

WiFi service will be available in many, but not all, in-building networks across campus. In those places where ITS manages and maintains this service it will appear as MWireless, MGuest and eduroam when browsing for WiFi networks. Available data rates and available frequency range will vary across campus based on the vintage of the WiFi hardware installed. Coverage maps are available at: http://www.itcom.itd.umich.edu/wireless/campus_map/.

Intended Consumers
The In-Building Network service is available to all units at U-M in one of two ways: 1. It is included as part of the MiWorkspace service and is a subset of the MiWorkspace SLE. 2. It is available to units with their own network administrator. At this time it is provided to all U-M units except: UMHS, Ross Business School, LSI, ISR, Flint, Dearborn.

Value Statement
The In-Building Networks service provides unified, secure connectivity to both the campus network and the Internet as a whole which enables access to information, collaboration, and mobility. Costs of the service scale well to keep total cost to U-M relatively low.

Management and Governance

<table>
<thead>
<tr>
<th>IT Service Role</th>
<th>Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Owner</td>
<td>Eric Boyd</td>
</tr>
<tr>
<td>Service Manager</td>
<td>Martin Stroud</td>
</tr>
<tr>
<td>Governance</td>
<td>Unit IT Steering Committee</td>
</tr>
</tbody>
</table>
Service Details

<table>
<thead>
<tr>
<th>Feature or Capability</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10Mbps/100Mbps/1Gbps Wired data connection</td>
<td>Standard wired connection with speed automatically set to the highest speed supported by the cabling and/or device connected.</td>
</tr>
<tr>
<td>802.1X Authenticated WiFi (aka MWireless and eduroam)</td>
<td>This is the preferred method for connecting computers to the WiFi network. 802.1x encrypts the data between your device and the access point (in the air) to help protect your private data.</td>
</tr>
<tr>
<td>Web Authenticated Guest WiFi (aka MGuest)</td>
<td>This service provides a bandwidth limited connection to the network for people who do not have an affiliation with the University. This service also allows those devices that cannot use 802.1X to connect to the network and use network services that require authentication.</td>
</tr>
<tr>
<td>DNS/DHCP</td>
<td>The in-building network will also provide DNS and DHCP service to the devices connecting to it. In some cases the DNS/DHCP service will be provided by the unit(s) in the building rather than being provided by ITS.</td>
</tr>
</tbody>
</table>

Service Expectations

Service Availability

Service Hours
The in-building network is generally available 24x7x365 and it is continuously monitored during that time.

Planned Maintenance
Every day of the week: 5:00 a.m. - 8:00 a.m.

Note that maintenance does not occur very often but at times there are software updates that need to be made in a timely fashion. When these software updates are made the network will typically be down for less than 5 minutes.

During all other hours changes may be made if approved by the local network administrators or MiWorkspace.
Emergency Maintenance
Emergency maintenance can take place at any time. It is performed in order to decrease total outage time. Operations will attempt to contact the local support staff before starting an emergency maintenance procedure. Current status will be reported on the ITS Status page.

Service Support

Requesting Support

End Users
Users experiencing network issues should contact 4-HELP/The Service Center or their Unit IT personnel. User requests for support regarding ITS services are processed through the ITS Service Center. To contact the Service Center:

- Submit a Service Request Online (login required)
- Call 734-764-HELP (764-4357)
- E-mail 4HELP@umich.edu
- In emergencies assistance and repair is available 24x7 by calling 734-764-HELP (764-4357)

Unit IT
To help determine the existence and scope of a possible problem, the Unit IT staff may contact the NOC at 734-647-8888, or send an email message to NOC@UMICH.EDU. Emergency after-hours support is also available. Time and material charges may apply based on level of service agreement.

Support Hours
ITS Service Center Hours for end user support are:
Monday–Friday: 7:00 a.m.–6:00 p.m.
Sunday: 1:00 p.m.–5:00 p.m. (e-mail only)

Types of Support

Normal Business Hours -
ITS provides the following service in the event that an outage or degradation occurs impacting the entire network or a large portion of the network, (this is dependent upon a number of factors including the number of attached users and the resources being accessed), during normal business hours, (i.e., Monday through Friday, 8:00 a.m. to 5:00 p.m., excluding University holidays and season days):

(a) Priority maintenance/repair service, characterized by:
- A response within 30 minutes of the UM NOC notification or the Units call, to provide information to the Unit on specific steps that have been/will be taken to resolve the problem.
- An on-site visit, if necessary, within two (2) hours of the response [i.e., the maximum on-site response time will be two and a half (2 1/2) hours]. An update will be provided to the Unit Network Administrator if on site and a best guess of the estimated time to repair (ETR) will be provided based on available facts. ITS will continue to provide the Unit with updates every two hours during an outage.
- If an outage is identified within the agreement service hours ITS will resolve the outage even if the repair time extends beyond the service agreement hours.
• All network switches are regularly monitored via SNMP (simple network management protocol) polling at one minute intervals.

(b) Provide all time and materials required to restore service.

Non-Business Hours -
ITS provides the following service in the event that an outage or degradation occurs on the entire network or a large portion of the network, (this is dependent upon a number of factors including the number of attached users and the resources being accessed), during non-business hours:
(a) Priority maintenance/repair service, characterized by:
  • A response within 30 minutes of the UM NOC notification or the Units call, to provide information to the Unit on specific steps that have been/will be taken to resolve the problem.
  • An on-site visit, if necessary, within two (2) hours of the response (i.e., the maximum on-site response time will be two and a half (2 1/2) hours).
  • All network switches are regularly monitored via SNMP (simple network management protocol) polling at one minute intervals.

(b) Provide materials only. Labor will be charged at the rates listed on http://www.itcom.itd.umich.edu/rates/
(c) For those customers with extended coverage (24x7), Time and Material charges are generally covered.

ITS will provide service during normal business hours, and within eight (8) business hours, to repair a circuit problem affecting one or more workstations

Self-Service Support
Information on connecting to the network is available here: http://www.itcs.umich.edu/connecting/
WiFi information and troubleshooting tips can be found here: http://www.itcom.itd.umich.edu/wireless/

Incidents and Outages

<table>
<thead>
<tr>
<th>Priority</th>
<th>Description</th>
<th>Target to Restore Services</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical</td>
<td>Incidents are classified as critical priority when there is a major, immediate risk to the university's ability to conduct its mission, because of disruption to users' ability to perform a function related to that mission.</td>
<td>4 hours</td>
<td>The backbone distribution layer switch fails or goes offline for any other reason, thus causing the building to become disconnected from the campus network.</td>
</tr>
<tr>
<td>High</td>
<td>Incidents are classified as high priority when there is an elevated risk to the university's ability</td>
<td>1 day</td>
<td>A network component or wireless failure, resulting in service interruption for a limited number of users</td>
</tr>
</tbody>
</table>
### Service Level Expectations

#### In-Building WiFi and Ethernet Networks

The university needs to conduct its mission, because of disruption to users' ability to perform a function related to that mission.

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>Recovery Time</th>
<th>Incident Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medium</strong></td>
<td>Incidents are classified as medium priority when users' ability to perform a function is impaired, and a risk to the university's ability to conduct its mission is present, but the university can manage around that risk over a short period of time.</td>
<td><strong>5 days</strong></td>
<td>A single power supply in a dual power supply device, a single wireless access point, a single switch port, or data jack fails.</td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td>Incidents are classified as low priority when users' ability to perform a function is impaired, but there is minimal risk to the university's ability to perform its mission.</td>
<td><strong>10 days</strong></td>
<td>Switch port is stuck at 100Mbps rather than auto-negotiating to 1Gbps</td>
</tr>
</tbody>
</table>

### Data Retention and Restoration

#### Backup and Restoration

No user data is retained. Configuration files are backed up nightly to allow the network devices to be restored to the last known configuration in the event of a device failure.

The network can be restored to the last known configuration, which is no more than 24 hours old. No user data is kept and so there is no recovery point objective (RPO) for user data.

#### Data Retention

No data is retained.

### Customer Responsibilities

#### Roles and Responsibilities

**Unit IT**
- Maintain their network(s) such that it does not compromise the performance or integrity of the
University’s Network Infrastructure. In consultation with others, as necessary, handle violations of the University’s Proper Use Policy, violations of system security, and all other applicable policies by service users.

- Provide support to the users of this service. Including, but not limited to the following:
  - First level network support for service users
  - Distribution of operating system software specific to the Unit network and assistance with installation of user network adapters
  - Distribution of applicable documentation for this service
  - Documentation covering security and the proper use of this service
  - Firewall configuration

- Track user data and administer services, including IP addresses and DNS services, resolve conflicts between users, and correlate IP addresses to individual machines. Provide ITS with electronic access to IP and address information 24 x 365.

- Notify ITS of any change regarding the Network Administrator at least one week before the change occurs. Notification needs to include the name and appropriate contact information; all information—to include: the e-mail, pager, and phone contact information for the Network Administrator and designate; the identification of which listed contact methods should be used by ITS to contact unit designates and which Administrator/Designate should be contacted during business and/or non-business hours--must be submitted through the use of the Network Information Change Request (NICR) Web site (http://www.itcom.itd.umich.edu/backbone/umnet/netinfo.html).

- Provide the Security Administrator, as appropriate, contact information by submitting that information through the NICR site.

- Give ITS at least two (2) hours advance notice of a change in the Unit’s network configuration that could potentially change the state of connectivity of the equipment covered in this agreement. If the Network Administrator is not sure if there will be an impact, then, he/she will contact the ITS UMNOC for advice. Notice must be given either by calling 647-8888, or sending email to NOC@UMICH.EDU. The Unit will be responsible for any incremental charges resulting from the Unit’s failure to notify ITS.

System Requirements
In order to connect to the wired in-building network the device must have a ethernet adapter and ethernet cable. To connect to the wireless in-building network the device must have a WiFi adapter.

Service Performance

Service Metrics & Reporting

<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
<th>Expectation</th>
<th>How Measured</th>
<th>How Reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Availability</td>
<td>System uptime, and overall availability are measured on an ongoing basis to ensure maximum availability and</td>
<td>Not currently available</td>
<td>The service is monitored via the ITS Service Status page: <a href="http://status.its.umich.edu/">http://status.its.umich.edu/</a></td>
<td>At this time, there are no reports that are published.</td>
</tr>
<tr>
<td>Service Level Expectations</td>
<td>In-Building WiFi and Ethernet Networks Efficiency.</td>
<td>monitoring tools such as Spectrum and Intermapper.</td>
<td>Service Responsiveness Service is measured to identify how accessible the network is to its customers.</td>
<td>Not currently available</td>
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<td>---------------------------</td>
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</tr>
<tr>
<td>Request Fulfillment</td>
<td>Indicates how quickly requests for services are fulfilled.</td>
<td>Service Request Time to Fulfill: 3 business days for routine requests</td>
<td>Pinnacle system is utilized for all requests and tracks open to completion.</td>
<td>Monthly reports are provided to the Project Managers</td>
</tr>
<tr>
<td>Incident Resolution</td>
<td>Indicates how quickly requests for repair are resolved or repaired</td>
<td>2-48 hours depending on the incident.</td>
<td>Remedy system is utilized for all incidents and tracks these from open to closed.</td>
<td>Monthly reports are provided to Operations managers.</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>Data collected from targeted Customer Satisfaction survey</td>
<td>Not currently available</td>
<td>Not currently available</td>
<td>Not currently available</td>
</tr>
</tbody>
</table>

Responses to Missed Service Expectations
ITS and the Unit acknowledge that performance and performance measures are affected by many factors that may be difficult to define and/or anticipate due to the nature and uses of the underlying systems and clients. Further, we recognize that “perceived response time” by users is a critical performance measurement. Therefore, in cases where the “perceived response time” by users becomes an issue, problems will be resolved by the procedures outlined below.

When performance measures do not meet the standards specified above, the Unit and ITS will jointly work to:

- Identify the cause of the problem.
- Resolve the problem as quickly as possible.
- If after eight (8) hours, the problem is not resolved, the problem will be escalated to the on-call Manager and the appropriate outage process will also be invoked.

ITS will own the problem until it is resolved or if the problem turns out not to be Unit network related, the problem will be articulated to the Unit and transferred to the appropriate party.

If resolution is not achieved within the timeframes listed in the Incidents and Outages section above, the Unit
may request to contact the ITS On-Call Manager or the ITS Operations Manager. This request must be made through the UM NOC (7-8888 or NOC@UMICH.EDU).

If resolution is not achieved within 24 hours, the Unit and/or ITS may escalate the problem to the appropriate ITS Project Manager (PM). If a resolution is not achieved within 72 hours, the Unit Director and the ITS Director of Operations, signers of the Service Agreement will be notified.

Changes and Enhancements
Evaluation and installation of software upgrades and/or patches (especially timely security patches) to the Unit Network Infrastructure components will be performed at the discretion of ITS. This maintenance will be made with a minimum disruption of service and coordinated in advance with the Unit Network Administrator.
# Initial Document Review & Approval

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Reviewed by</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td><strong>Initial Draft</strong></td>
<td>Richard Boyd</td>
<td></td>
</tr>
<tr>
<td>Created by Service Owner and Business Planning Lead(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>QA Review</strong></td>
<td>Lynne Pavesi</td>
<td>5/13/13</td>
</tr>
<tr>
<td>Service Manager, Business Planning Lead(s) &amp; applicable colleagues</td>
<td>Phil Ray</td>
<td>5/14/13</td>
</tr>
<tr>
<td></td>
<td>Lynne Pavesi</td>
<td>6/4/13</td>
</tr>
<tr>
<td><strong>SPO Review</strong></td>
<td>Andy Palms</td>
<td>6/7/13</td>
</tr>
<tr>
<td>Service Portfolio Owner</td>
<td></td>
<td></td>
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<tr>
<td><strong>Service Owner Review</strong></td>
<td>Richard Boyd</td>
<td>06/09/2016</td>
</tr>
<tr>
<td>Service Owner</td>
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# Revised Document Review & Approval

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Reviewed by</th>
<th>Date</th>
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<tbody>
<tr>
<td><strong>Revised Draft</strong></td>
<td>Richard Boyd</td>
<td></td>
</tr>
<tr>
<td>Approved by Service Owner and drafted/edited by Business Planning Lead(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>QA Review</strong></td>
<td>Dorin Dredetean</td>
<td></td>
</tr>
<tr>
<td>Service Manager, Business Planning Lead(s) &amp; applicable colleagues</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SPO Review</strong></td>
<td>Andrew Palms</td>
<td></td>
</tr>
<tr>
<td>Service Portfolio Owner</td>
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</tr>
</tbody>
</table>

Service Level Expectations

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LAN Infrastructure Maintenance
LAN Installation

Communications Outlet

LAN Infrastructure Maintenance
LAN Installation Component

Copper or Fiber Ethernet

Switch

Second Floor

AP

First Floor

Switch

Basement

Typical Network

Fiber Ethernet to Backbone Router