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THE PURDUE UNIVERSITY DOMAIN NAME SYSTEM -USE STANDARD

Issued April 7, 2014 from IT Infrastructure Services.
Questions about this standard can be addressed to hostmaster@purdue.edu.

I.   Introduction:

The Domain Name System (DNS) is a distributed database system used to translate hostnames (i.e., *www.purdue.edu*) to IP addresses (i.e., *172.31.9.5*) and to translate IP addresses back to hostnames. The Internet Architecture Board has delegated global authority for the DNS to several top-level registries. These registries further delegate authority for portions of the DNS to sites on the Internet and may, in turn, have portions of their namespace delegated to other entities.

At Purdue University, authority for the *purdue.edu* namespace has been delegated to ITaP's Infrastructure Services (ITIS) group. ITIS is responsible for the smooth operation of the Purdue DNS and works with other departments to coordinate changes and manage resources for the benefit of the University as a whole.

The purpose of this standard is to provide clarity for users of the Purdue University DNS and to maintain consistency in the practice of selecting and naming the domains of services and organizations at Purdue University.

II.   Standards:

Top-Level Host Names
A top-level host name is a host name in the *purdue.edu* namespace that is not a member of any subdomain (e.g., *itap.purdue.edu).* In general, host names belong inside subdomain names associated with the owning organizational entity. However, some hosts provide services to the University community and do not properly belong in a subdomain. These hosts must be owned or administered by an officially recognized University organization. Purdue host names may not be registered to a non-Purdue network resource or IP address.

The procedure for applying for a top-level host name is set forth in the *Procedures for Use of the Domain Name System at Purdue University* document.

Subdomains
Each University organizational entity is entitled to one subdomain of *purdue.edu*. The subdomain name shall reasonably reflect the name of the organizational entity and must conform to the naming conventions detailed below under the *University Naming Convention* section. These names shall not overlap with other organizational entities so that there is no confusion about what subdomain a host should be part of.

For example, there should not be *itis.itap.purdue.edu*. An exception to this practice may occur when the school provides central resources for its member departments that are owned and administered separately from departmental resources.

The Domain Oversight Committee must approve any exceptions to this practice in writing.

Student Organizations
Recognized University student organizations are not entitled to a subdomain. Student organizations may register hosts within the *student-orgs.purdue.edu* subdomain. Host names should reflect the student organization's name. A recognized student organization may qualify for a top-level host name in some circumstances.

The procedure for registering names for student organization machines and the procedure for applying for a top-level host name for a student organization are set forth in the *Procedures for Use of the Domain Name System at Purdue University* document.

Foreign Domain Names
Purdue University recognizes that foreign domain names may be required or desired by various organizational entities. When these names are associated with devices on the West Lafayette campus network, the official registered name of the machine must be an appropriate *purdue.edu* name. All foreign names will be aliases of this official name. ITIS must be notified in advance of foreign domain name use.

The procedures available for utilizing foreign domain names are set forth in the *Procedures for Use of the Domain Name System at Purdue University* document.

University Naming Convention
In addition to any requirements specified above, all names for subdomains, hosts or foreign domains must conform to the following technical requirements:
- Each label must consist of only letters, numbers and the hyphen ('-') character.
  - **Note**: Letter case-sensitivity is *not* significant.
- Each label must start and end with a letter or number.
- Any single label may not be more than 63 characters long.
- The entire name may not be more than 255 characters long.

Subdomain names shall be at least three characters long to avoid potential security issues and user confusion. All existing two-letter subdomain names may continue to exist.

Top-level domains in the DNS shall not be used as host or subdomain names because of potential security issues and the confusion that they may cause. Examples of top-level domains in the DNS include: .com, .edu, .gov, .mil, .net and .org.

All names for subdomains, hosts or foreign domains are a reflection of Purdue University. Good taste should be used in name selection. Names should not be misleading, whether intentionally or not, to a person reasonably familiar with the University. Names may not infringe on any copyrights.

In addition, all names must comply with all University policies and applicable departmental policies and procedures, such any style standards issued by Purdue Marketing and Media, where applicable. All name services will be provided by the centrally run DNS server except as approved by the Executive Director of ITIS.

III.   Compliance:

Centralized and departmental IT units, IT Resource owners and those individuals requesting subdomains, hosts or foreign domains are responsible for ensuring appropriate enforcement of this standard and related standards on University IT Resources within their areas of responsibility.

The formal *Security Policy Exception Procedure* must be followed for any exceptions to the requirements stated in this standard. The Executive Director of ITIS, or his or her designee, must approve any exceptions to the requirements stated in this standard.

Purdue Marketing and Media is responsible for ensuring the correct use and integrity of the Purdue seal and mascot logo on all University publications, supplies, materials and equipment, whether produced by the University or an outside agency. Any questions about appropriate use of the seal and mascot logo should be directed to the office at (765) 494-2034.

IV.   Definitions:

Word	Definition
Domain	A domain or domain name is any name in the DNS regardless of its location in the tree. At Purdue University, the term *domain* typically refers to the top level of the namespace delegated to Purdue, namely *purdue.edu.*
Domain Name System	The Domain Name System (DNS) is a distributed-database system structured as a collection of trees. Each branch of the tree is assigned a label to further distinguish it from its siblings. At the leaves of the tree are individual hosts, each of whose names is the concatenation of all labels leading back to the root separated by a period or *dot*. This chain of labels forms a unique name within the global DNS. For example, *www.purdue.edu* consists of the three labels *www*, *purdue*, and *edu*.
Foreign Domains	A foreign domain is any domain in the DNS space that is maintained by Purdue University that is not part of the *purdue.edu* namespace.
Host (or host name)	The DNS does not strictly define the term *host,* but in common usage, it

Word	Definition
	is used to describe a leaf of the *purdue.edu* namespace.
Hostmaster	The entity responsible for managing the IPAM system within the Purdue Domain Name System. Hostmaster at Purdue is maintained by ITIS. All questions about the Purdue University DNS, host registration, IPAM or other requests designated in this document must be directed to the Purdue University Hostmaster at hostmaster@purdue.edu.
IPAM	IP Address Managenet (IPAM) is software or a device that aids in the management of DNS and DHCP addresses. In this instance, it includes delegation of management down to a departmental level to allow groups on campus some control over the addresses that have been assigned to them.
Label	A portion of a domain, subdomain or host name between the start of the name and the first dot, between any two dots or between the last dot and the end of the name.
Network	An address space delegation from a central registry. Examples of networks at Purdue University are *128.210.0.0* and *128.46.0.0*.
Organizational Entity	A department, school or other independently identifiable portion of Purdue University. An organizational entity typically has a department number or a separate account (or collection of accounts) in the University's accounting system.
Subdomain	The DNS does not strictly define the term subdomain, but in its common usage it is used to describe a non-leaf sub-tree of *purdue.edu*. For example, in the name *www.itap.purdue.edu*, *itap.purdue.edu* is a subdomain name.
Subnetwork (Subnet)	A portion of a network that can be used as unit of delegation and routing. Subnets at Purdue typically use 24-bit masks, so the subnet number can be readily determined from the third part of an IP address. For example, *128.210.11.0* is subnet 11 of *128.210.0.0*.
Top-Level Host Name	A top-level host name is a host name in the *purdue.edu* namespace that is not a member of any subdomain. For example, *itap.purdue.edu*.

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V.   Related References:

※   University IT Policies are available at:
     http://www.purdue.edu/policies/information-technology.html

※   Standards supporting the implementation of University IT Policies are available at:
     http://www.purdue.edu/securepurdue/bestPractices/

※   Security Policy Exception Procedure available at:
     http://www.purdue.edu/securePurdue/bestPractices/deviationProcedure.cfm

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