

# Virtualization as a Service (VaaS)

## Benefits

### It's Green! Save on power, space, and cooling

With VaaS, units no longer utilize their physical location, which also saves hardware costs and reduces the university's carbon footprint.

### Enterprise solutions at a low cost

VaaS offers servers, and storage at a much lower cost to units than if purchased separately.

### Scalable and flexible

Add resources to your virtual servers in hours rather than weeks. Buy only what you need.

### No lengthy waiting to get a server

Standard virtual server requests are usually fulfilled within one business day (except for new customers).

### No upgrades to configure or equipment to buy

It all happens on the VaaS side. Plus, there's no more hardware vendor support or corresponding contracts to maintain.

### Better utilize staffing

VaaS will save time so units can refocus staff to supporting other areas.

### Technology refresh at no additional cost

Because units no longer manage the physical hardware, technology upgrades occur behind the scenes at no additional cost.

### Hardware fault tolerance

VaaS offers protection from lengthy outages from hardware failures through utilization of hardware redundancy within a datacenter.

### Increased security

VaaS uses enterprise datacenters which incorporate 24/7 staffing, restricted physical access, and 24/7 video monitoring.

### Disaster recovery of virtual servers

VaaS offers protection of all virtual servers, allowing for recovery through SAN based data replication to an alternate datacenter.

### Offsite encrypted tape backups

Backups are stored onsite and offsite; offsite tapes are encrypted and sent to a third party remote facility. Unit system administrators can perform secure offsite backups of files and servers.

## Features

Virtual servers utilize multi-node VMWare ESX clusters for virtual servers with the following Operating Systems:

- Microsoft Windows
- Linux
- Netware
- Solaris Operating Systems.

**Remote access** to virtual servers allows mounting of local CDs eliminating requirements for physical server access in most every case.

**Fault tolerance** within the datacenter to automatically move virtual servers to other hardware in the event of a hardware failure.

**Security** is covered with staff monitoring the technical infrastructure in a secured data center at all times.

**24/7 support** from the Help Desk, ready to answer your questions or involve the right people to address any VaaS issues.

## Pricing Details

Server Size	Specification	Cost per Month
Small	1 CPU, 1GB Memory, 30GB Disk	\$39.91
Medium	2 CPU, 1GB Memory, 30GB Disk	\$51.99
Large	4 CPU, 1GB Memory, 30GB Disk	\$76.15
Additional Memory	1 GB (maximum of 8GB / Server)	\$1.26
Additional Disk	1 GB (purchased in 10 GB increments up to a total of 1 TB / Server)	\$0.21 / GB

For more information, visit:

[vaas.umich.edu](http://vaas.umich.edu)



# Computer Power & Patch Management (CPPM) offers...

## Prepackaged patches and updates

There is no longer a need to develop them. It's just a matter of testing in your environment before releasing them to all of your managed computers.

## Customization

Codes can be easily copied and wizards re available to simplify the process of creating custom software updates that may be needed during deployments, configurations, scheduling, and rollback operations.

## Target patches and power management by customizable attributes

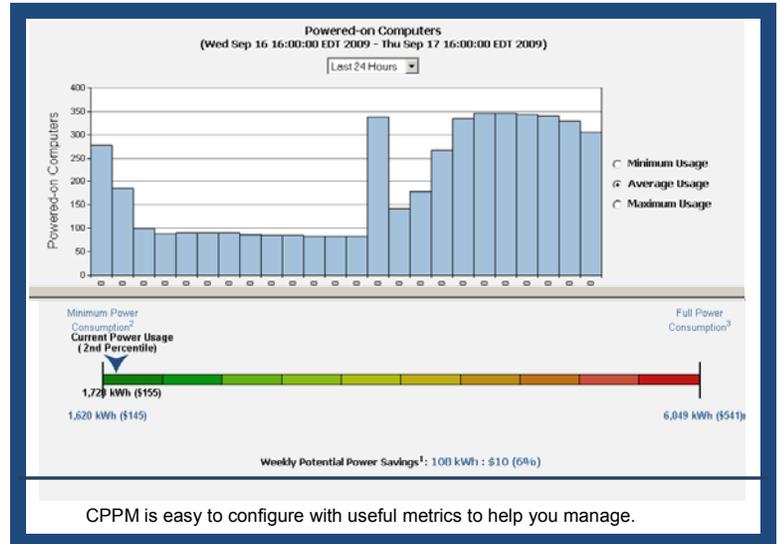
Use machine model, subnet, Active Directory OU, or operating system to push specific fixlets.

## Manage your computers in multiple ways

The operator's console allows you to organize and view computers by Active Directory, your groups, and/or machine properties (e.g. missing patches, OS, hardware manufacturer model number, etc.).

## Compatible with both Windows PCs and Macs

- Connect in one console
- Easily deploy power management policies to fit specific users' needs
- Remotely control startup, hibernate, and shutdown
- Deploy wake-on-LAN commands
- View charts and graphs of power state statistics



## Web reports service for non-IT managers

View a high level summary view of workstation status for an area, with drill down details for: power utilization and savings; deployment of security and other patches; basic inventory data; etc. Managers don't need to access the full operator's console. Web reports can be automated to run on a scheduled basis, delivered via e-mail or stored in an archive

- Manage machines through the campus network or the Internet
- Manage servers for the same price
- Configuration changes can be silent or communicated to end users

For more information, visit:

[cppm.umich.edu](http://cppm.umich.edu)

## Configure results....

Configuring CSCI @ U-M sleep/hibernate recommendations on 10 computers (on nine hours a day) saves the equivalent of carbon sequestered annually by one acre of pine or fir forests.

Weekly Power Consumption	
Electricity Cost:	.08 \$/kWh
Display Results in:	Power Usage
Results Time Period:	Weekly
Work Hours per Day:	9
Work Days per Week:	5
Display Estimated Power Cost:	<input checked="" type="checkbox"/> Update
Computers with System Standby enabled:	344 of 438 - 79%
Monitors with Power Management enabled:	433 of 438 - 99%
Hard drives with Power Management enabled:	345 of 438 - 79%
Average computer powered-on time per day:	08:51:00 - (37% of a day)
Track:	<input checked="" type="checkbox"/> Laptops (119) <input checked="" type="checkbox"/> Workstations (319) <input type="checkbox"/> Servers (0)

Infrastructure and patch compliance managed by:

**M** UNIVERSITY OF MICHIGAN  
Information and Technology Services

