All About K1000 (KBOX) Patch Management

The introductory article on patch management can be found here.

KBOX Patch Management

The K1000 is only for Carleton-owned computers.
You must be ON CAMPUS to log into the K1000 or connected via the VPN, as described below.

Please **contact the ITS HelpDesk** if you would like help using the K1000.
You can reach them at **x 5999** or by email at: *helpdesk@carleton.edu*

The K1000 receives patches from Lumension , a security company. These patches are then delivered to campus computers. Patches in the K1000 are security related patches only. Feature related patches and upgrades are not available from K1000 patch management.

What patches are delivered by the K1000?

The K1000 delivers security-based patches for the following applications:

- Adobe AIR
- Adobe Acrobat
- Adobe Reader§
- Adobe Flash Player (on Windows, ActiveX and plugin)§
- Adobe Shockwave Player
- Apple iCloud (Windows)
- Apple iTunes (Windows)
- Apple QuickTime (Windows)
- Apple Safari web browser (Windows)
- Audacity (Windows)
- Citrix Receiver
- FileZilla Client (Windows)
- Google Chrome (Windows)
- Google Earth (Windows)
- Inkscape (Windows)
- Microsoft Silverlight and Remote Desktop (Mac)
- Microsoft Office (Mac)
- Mozilla Firefox (consumer version)§
- Mozilla Firefox ESR§
- Notepad++ (Windows)
- Oracle Java (Java Runtime Engine, or JRE)§
- VideoLAN VLC media player (Windows)
- VMWare Fusion, Player, Workstation
- WinZip and 7-Zip (Windows)
- WireShark and WinPCap (Windows)

(§ are frequently exploited, and so are considered critical)

When are patches delivered by the K1000?

When software vendors release patches, Lumension and KACE test them before making them available to the K1000. This provides more levels of review to catch any potential problems. The K1000 downloads new patch signatures and patch package files for selected operating systems nightly. Then, Carleton computers use the available patches based on the patch schedule to which each computer is assigned. Some patch schedules check for ("detect") patches at one time, and then apply ("deploy") the detected patches at a different later time. Other patch schedules check for ("detect") patches and then apply them ("deploy") immediately thereafter.

There are **10 different patch schedules** to which a computer can be assigned. Each computer, virtual machine (VM), and booting operating system (e.g., dual boot), should be assigned to one and only one patch schedule. Any VM or booting operating system on a computer should be assigned to a different schedule than the computer itself, so you can make sure the correct environment is running at the time of each schedule.

Note: We have found it is very difficult to explain these different patch schedules in writing, so please be patient in reviewing this section, and contact the ITS HelpDesk (x5999) when you have questions.

Here is a list of the different patch schedules each with a different color, and next to that is a picture of when the different steps (detect or deploy) of each patch schedule runs:

TuesdayCommonTime	
MondayEndOfDay	
TuesdayEndOfDay	
TuesdayOvernightNOJava	
ThursdayCommonTime	
Convo	
ThursdayEndOfDay	
WednesdayOvernight	
WednesdayOvernightNOJava	
NextCheckIn	

Intervals:	Monday	Tuesday	Wednesday	Thursday	Friday
Night - Early Morning				5:52 -, 5:55 -	6:00
Morning				11:05a- 12:35p	11:00 - 11:30
Afternoon	12:05	12:05 - 12:35	12:05	12:05 - 1:35	
Evening - Overnight	5:00 -	5:00 -, 7:00 -	5:00	5:00 -	

Key:	
Deployments show a duration	11:00 - 11:30 or 5:00 - (means ∞)
Detections Only show no duration	(no -)
NextCheckIns can happen *anytime*	

What do I see when the patch schedule steps run?

When a patch schedule Detect only step runs, nothing is displayed. The computer may seem a bit sluggish, but you can keep working.

Every patch schedule Deploy step has these characteristics:

- When starting, the K1000 displays an OK/Snooze choice to you for 15 minutes, then proceeds if there was no response.
- If you choose Snooze, the K1000 waits 5 minutes and asks again.
- The K1000 displays a Patching in Progress message continuously until this step is completed.
- The actual patching process takes significant computer resources, so your other work may be noticeably affected.
- Some applications (e.g., Java) will not patch successfully if the application is running at the time the patching is attempted, so during the Deploy step you should close any applications and Web browsers you are not actively using.
- If a reboot is needed, the K1000 displays a Reboot prompt to you for 5 minutes, and re-prompts every hour (unless auto-reboots).

This table lists the different patch schedules again with more detailed information:

Patch Schedule Name	Color	Leave Computer on Which Night?	When Detect Runs	If Missed, Detect at Next Check In?	When Deploy Runs	If Missed, Deploy at Next Check In?	Deploy Auto-terminates After:	Deploy Auto-reboots until Finished?	Deploys All Application Patches?
TuesdayCommonTime		*none*	Mon 12:05p	Yes	Tues 12:05p	No	30 min	No	Yes
MondayEndOfDay		Mon	Mon 5:00p	No	(right after)	No	never	Yes	Yes
TuesdayEndOfDay		Tue	Tue 5:00p	No	(right after)	No	never	Yes	Yes
TuesdayOvernightNOJava		Tue	Tue 7:00p	No	(right after)	No	never	No	No, not Java
ThursdayCommonTime		*none*	Wed 12:05p	Yes	Thu 12:05p	No	90 min	No	Yes
Convo		Wed	Wed 5:00p	Yes	Fri 11:00a	No	30 min	No	Yes
ThursdayEndOfDay		Thu	Thu 5:00p	No	(right after)	No	never	Yes	Yes
WednesdayOvernight		Wed	Thu 5:55a	No	(right after)	No	never	Yes	Yes
WednesdayOvernightNOJava		Wed	Thu 5:52a	No	(right after)	No	never	Yes	No, not Java
NextCheckIn		Thu	Fri 6:00a	Yes	Thu 11:05a	Yes	90 min	No	Yes

Again, we know this information is hard to interpret. Please contact the ITS HelpDesk (x5999) for help.

Which patch schedule should I choose?

It depends on when the computer (or VM or booting operating system) is active and on the campus network, and whether you want patching to compete with your trying to get other work done. In general, if you don't want to be interrupted, choose an **EndOfDay** or **Overnight** schedule, and leave your computer powered on, not in sleep mode, and connected to the campus network.

If you take your laptop computer home most nights, choose instead a schedule that runs during the day at a time when you may be away from your desk (e.g., **Convo**, **CommonTime**).

If your laptop computer is seldom on campus at all, choose the **NextCheckIn** schedule which will try to run every time you are back on the campus network if you miss the scheduled times. But NextCheckIn can be very annoying, so choose it only if none of the other schedules works for you.

A note about the **NOJava** schedules: The patch schedules whose names contain the phrase NOJava exclude any Java Runtime Engine (JRE) updates, because a few third-party applications run correctly only when their preferred version of Java is not changed. Only if you have such an application should you choose a NOJava schedule, and in those cases, you can enhance your computer security by disabling Java in Web browsers: Look for a Java Control Panel with a Security tab and a setting titled "Enabled Java content in the browser" that you can uncheck. If doing this causes the application Web site to fail, just reverse your actions.

More detailed information is available about each of these schedules.

When software vendors release patches, Lumension tests them before making them available to the KBOX. This provides a second level of review to catch any potential problems. The KBOX downloads patches on a nightly basis. Carleton computers are set to check for patches on one of the following schedules:

- **Thursdays at 3:00 am**
    - this schedule is recommended for computers connected to the campus network at 3:00 am
    - computers should automatically power on at 2:50 am (Wake on LAN)
    - at 3:00 am the KBOX will detect and deploy patches
        - the KBOX will suspend pending tasks after 3 hours
        - if a patch is actively being installed at the 3 hour mark, it will continue installing
        - if a reboot is required, users will be prompted to reboot. After 5 minutes a reboot will be forced and patching will continue
- **Thursdays at 12:05 pm (Common Time)**
    - This schedule is recommended for computers connected to the campus network on Tuesday/Thursday from 12-1 pm
    - Tuesday at 12:05 pm the KBOX will detect which patches need to be deployed
        - no patches will be deployed at this time
        - the KBOX will suspend pending tasks after 50 minutes
    - Thursday at 12:05 pm the KBOX will deploy patches
        - based on the patch list compiled on Tuesdays
        - the KBOX will suspend pending tasks after 30 minutes
        - if a patch is actively being installed at the 30 minute mark, it will continue installing
        - if a reboot is required, users will be prompted to reboot but a reboot will not be forced
- **Thursdays at 12:05 pm (Common Time) or next connection**
    - This schedule is recommended for highly-mobile computers, or computers that are rarely connected to the campus network
    - Friday at 4:00 am the KBOX will detect which patches need to be deployed
        - if the computer is not connected to the campus network at this time, a detect will run the next time it is connected
        - no patches will be deployed at this time
        - the KBOX will suspend pending tasks after 60 minutes
    - Thursday at 12:05 pm the KBOX will deploy patches
        - if the computer is not connected to the campus network at this time, a deploy will run the next time it is connected
        - based on the patch list compiled previously
        - the KBOX will suspend pending tasks after 30 minutes
        - if a patch is actively being installed at the 30 minute mark, it will continue installing
        - if a reboot is required, users will be prompted to reboot but a reboot will not be forced
- **Thursdays at 5:00 pm**
    - this schedule is recommended for computers connected to the campus network at 5:00 pm
    - at 5:00 pm the KBOX will detect and deploy patches
        - the KBOX will suspend pending tasks after 5 hours
        - if a patch is actively being installed at the 5 hour mark, it will continue installing
        - if a reboot is required, users will be prompted to reboot. After 5 minutes a reboot will be forced and patching will continue
- **Fridays at 11:00 am (Convo)**
    - This schedule is recommended for computers connected to the campus network on Thursday from 12-1 pm and Friday 11 am - 12 pm
    - Thursday at 12:05 pm the KBOX will detect which patches need to be deployed
        - no patches will be deployed at this time
        - the KBOX will suspend pending tasks after 50 minutes
    - Friday at 11:00 am the KBOX will deploy patches
        - based on the patch list compiled on Thursdays
        - the KBOX will suspend pending tasks after 30 minutes
        - if a patch is actively being installed at the 30 minute mark, it will continue installing
        - if a reboot is required, users will be prompted to reboot but a reboot will not be forced

How do I tell if my machine is on a patch schedule?

1. Visit the K1000 user portal in your web browser
2. Log in with your Carleton username and password

3. Click the **My Computer** tab
4. Scroll down the page to the Activities section
5. Click on the **Labels** link
6. If you have a Label beginning with **PatchSelf**, your machine is on a patch schedule
   a. Note: If you have a VM, multiple Operating Systems, or multiple computers, you'll need to repeat this process from each VM/OS/computer

How do I join a KBOX patch schedule?

1. Visit the K1000 user portal in your web browser
2. Log in with your Carleton username and password
3. Click the **Software Library** tab
4. In the **Search** field, type **Patch** and click Search, or scroll down the page until you see the entries beginning with **Patch Schedule:**
5. Click on the desired Patch Schedule. (If the Patch Schedule you want does not appear in the list, contact the ITS HelpDesk x5999.)
6. Read the Installation Instructions and click Install Now
   a. Note: If you have a VM, multiple Operating Systems, or multiple computers, you'll need to repeat this process from each VM/OS/computer

What if my software is already up-to-date?

K1000 patch management should not reinstall patches that are already applied, nor should it downgrade your applications. With regard to Mozilla Firefox, note that version 31.1esr was released at the same time as consumer version 32 (31+1=32), so ESR version numbers may appear old when they are actually up to date.

How do I keep my computer from sleeping when a patch schedule starts long after I leave?

K1000 patching cannot run if a computer is in sleep mode at the scheduled time. Most campus computers are configured to go into sleep mode after a period of inactivity, usually 4 hours. But if a patch schedule step runs at 6am, and you left your computer on at work at 6pm, the computer will be sleeping by 6am when patching is supposed to start.

There are 4 solutions to this problem:

1. In the power management settings on your computer, disable the computer's sleep mode entirely (but this wastes energy).
2. In the power management settings in your computer operating system or BIOS, schedule the computer to wake up about 20 minutes before patching is scheduled to start.
3. Launch a "keep awake" utility on your computer when you leave, so it never becomes inactive and so never sleeps. For Windows, we have had good results with a free utility called Caffeine, from Zhorn Software.

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