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VIDYAGYAN
|| VIDYA PARAM AISHWARYAM ||

Challenge
- Software updates congesting network
- Slow browsing speeds and internet restrictions for users
- Too much IT resource on controlling usage

Solution
- 2 x **CACHE**BOX**210** - deployed at each site

Benefit
- Software updates taken off the network
- Instant speed improvements for users
- Easier for teachers to use internet in class
- Freed up bandwidth capacity for other learning curriculum

Students and teachers were not permitted to access bandwidth-intensive sites like YouTube or any media content via the Internet.

Vinit Kishnatrey, Lead-IT infra

VidyaGyan speeds up web content with affordable caching

An initiative of the Shiv Nadar Foundation, VidyaGyan is a leadership academy specifically designed to identify and nurture gifted students from underprivileged backgrounds and provide them with high-quality education. Established in 2009, VidyaGyan currently has two campuses in Uttar Pradesh and is one of the most successful models of rural leadership development in India.

Software updates saturating internet connection

Students and teachers at the academy rely heavily on fast access to web content throughout the day. However, at both its sites – Sitapur and Bulandshahr - Lead - IT infra Vinit Kishnatrey, received dozens of complaints daily about internet speed being too slow.

Sitapur's site had a 75Mbps bandwidth connection and Bulandshahr's had 100Mbps. However, with 450 devices accessing the internet at each site, Vinit discovered that Microsoft and Windows updates regularly consumed gigabytes of data daily - crippling the network.

"As a result, I got a lot of complaints from students and teachers about extremely slow browsing speeds – they were waiting a very long time for websites and videos to buffer. And even though a bandwidth upgrade was relatively cheap, we knew through experience that it wouldn't resolve speed issues," says Vinit.

Restricting internet use only made matters worse

Initially, the academy's IT department tried to reduce congestion by controlling internet use.

Vinit explains: "Students and teachers were not permitted to access bandwidth-intensive sites like YouTube or any media content via the Internet. If teachers wanted to use this type of content in the classroom, they'd have to ask the IT team to download it, and then later show it to students. Teachers did have some limited access to the internet, but they were only allowed to download content between 7pm-10pm."

Despite these restrictions, user experience remained poor, and students and teachers were very dissatisfied with the internet service.

Vinit knew he needed a more permanent solution at these sites and, having used caching to solve the problem at the academy before, he decided to look for an affordable yet effective caching appliance.

Solution

Vinit assessed the **CACHE**BOX solution and found it eliminated software update congestion and made online educational content faster in class.

So, he deployed a **CACHE**BOX**210** at each of the two sites to handle the large repeat requests that were slowing down the network.

"**CACHE**BOX was easy to deploy and use, and it's more affordable than other solutions we looked at," says Vinit.

> *Now, with **CACHE**BOX in the network, all media and YouTube has been enabled for users. This is a huge change for us - and saves the IT team 2-3 hours of time a day!*

Vinit Kishnatrey, Lead-IT infra

> *On average, 65%+ Microsoft updates and 75%+ Windows updates are now served by **CACHE**BOX.*

Vinit Kishnatrey, Lead-IT infra

BENEFITS

Once deployed, the **CACHE**BOXes immediately alleviated network congestion, resulting in much faster web access for students and teachers.

User experience significantly improved

Instantly, Vinit noticed far fewer complaints about slow internet. Content is now delivered significantly faster. By storing popular content and serving it directly at LAN speed, **CACHE**BOX delivers popular content many times faster than from the internet. But even objects served from the internet are faster because **CACHE**BOX has freed up bandwidth capacity.

Domain	VOLUME of DATA			AVERAGE SPEED		
	Transfer	% of total	% cached	Miss	Hit	
*.windowsupdate.com	75.0 GB	21.34%	56.50%	139 KB/s	918 KB/s	→ *6.6x faster*
*.fotapro.net	54.9 GB	15.61%	99.95%	2.00 KB/s	3.06 MB/s	→ *1,530x faster*
*.adobe.com	30.3 GB	8.61%	95.93%	246 KB/s	7.25 MB/s	→ *29x faster*
*.microsoft.com	30.0 GB	8.54%	65.33%	113 KB/s	1.22 MB/s	
*.office.net	17.9 GB	5.09%	98.96%	21.4 KB/s	559 KB/s	
*.akamaized.net	15.3 GB	4.34%	17.37%	151 KB/s	190 KB/s	
*.apple.com	10.7 GB	3.05%	10.86%	151 KB/s	2.18 MB/s	

Vinit comments: "Now, with **CACHE**BOX in the network, all media and YouTube has been enabled for users. Teachers don't need to come to the IT department or download content within specific timeframes - they are free to go to classes and can access this content directly, with no hassle. This is a huge change for us - and saves the IT team 2-3 hours of time a day!"

Serious bandwidth savings

Looking at **CACHE**BOX reports, Vinit can clearly see the impact **CACHE**BOX has on the academy's network. The biggest bandwidth hogs are now taken off the internet and being served by **CACHE**BOX. This has directly alleviated congestion by caching gigabytes of network traffic.

"On average, 65%+ Microsoft updates and 75%+ Windows updates are now served by **CACHE**BOX," he says.

"One of our schools has a daily bandwidth consumption of around 200Gb. **CACHE**BOX is serving around 115Gb of that, which is brilliant! I am very satisfied with the results. We're saving so much bandwidth, especially on items that were previously congesting our network, like software updates and videos."

"We actually downgraded bandwidth at both the sites by 25Mbps each since installing **CACHE**BOX because it deals so well with our most popular traffic!"

"The user interface is easy to use. We look at the reports weekly, and **CACHE**BOX gives us great visibility over our network."

Enabling capacity for more content

With software updates handled, the academy can now implement more of its online curriculum. "We plan to roll out Khan Academy's eLearning platform starting next year. **CACHE**BOX will help ensure the smooth running of this," says Vinit.

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