

Input	Codec	Size
Stream 1	FMP4, 25 fps	5294 K
Stream 2	FMP4, 25 fps	5294 K

Output	Codec	Size
0% overlap	FMP4, 25 fps	10252 K
25% overlap	FMP4, 25 fps	9008 K
50% overlap	FMP4, 25 fps	7749 K
75% overlap	FMP4, 25 fps	6501 K

significantly affect the size of the output video and even composition of multiple non-overlapping streams marginally reduces the total size. This indicates that we can achieve significant bandwidth savings when performing composition in the middle of the network.

Here we show more complex scenario where we put three media composers distributed throughout the network. The media composers will compose the streams according to the receivers' requirements. For example, Receiver 1 wants to see only application 1 and 2; Receiver 3 wants to see only application 3 and 4; and Receiver 2 wants to see all applications. In addition, we can do load balance between the media composers.

X10 (http://x10.codehaus.org/)

X10 is a new parallel, distributed object-oriented programming language with Partitioned Global Address Space (PGAS) being developed at IBM Research in collaboration with academic partners. As shown above, we intend to develop the X10 media composer using native X10 and existing C and Java libraries. X10 media composer instances running over multiple application servers will help us balance application load, and in the next step, we intend to extend X10 media composers to run inside the network in order to optimize network load and allow for resource optimization in complex scenarios while not compromising on video quality.