

H.325 Overview

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Objectives

- Improve the end **user experience**
- Enable innovative **applications**
- Enable **mobility**
- Enable **multimedia**
- Make it **easy to use**
- Improve **productivity**
- Ease **application and service** development

H.325 Will...

- Be a **new and different** multimedia system
- **Not be just a Voice** over IP system
- **Enable a union of physically separate devices**, like a desk phone, mobile phone, or LCD panel on the wall
- **Enable multiple applications** to work together in order to deliver a rich communication experience



Status of H.325

- H.325 is a **work in progress**
 - Work was approved to begin in 2008
 - H.325 is a key focus area of ITU-T SG16
- It is a project from the same multimedia communications experts group that created H.320, H.323, H.324, etc.
- **Editors assigned** to most base documents, including system architecture, terminal architecture, network facilities, and signaling



So What is H.325 Exactly?

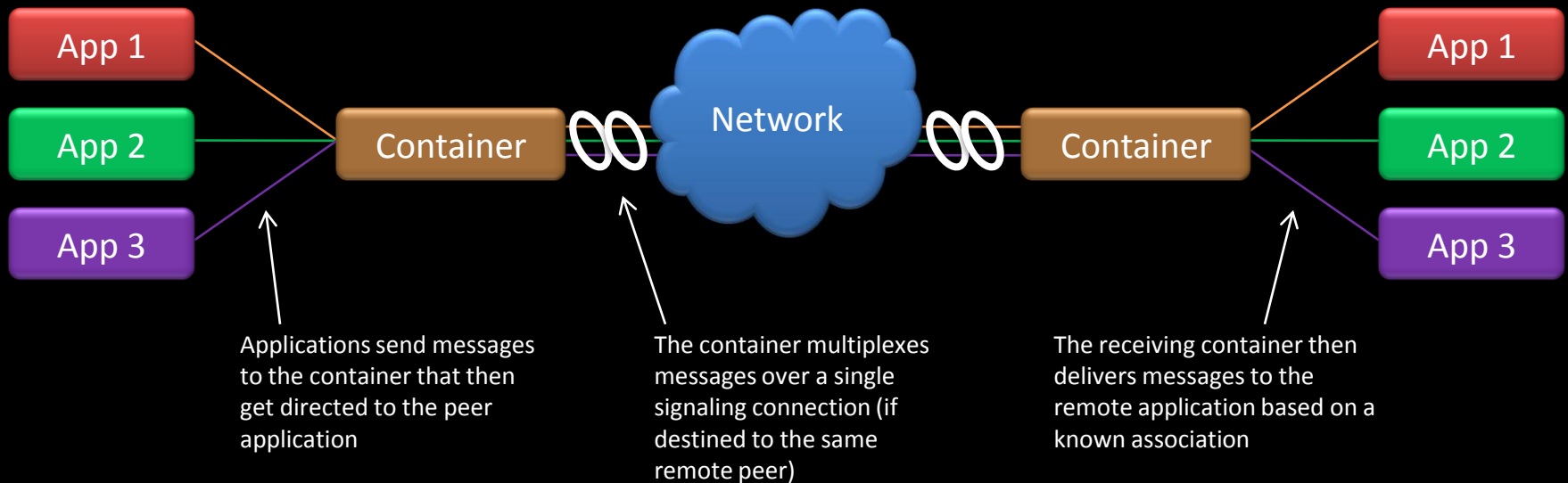
- H.325 is a **new multimedia system**
- Significant **improvement** over legacy SIP and H.323 in the diversity of applications that will be enabled
- Enables communication across **a multiplicity of devices**
- A **new architecture** comprising
 - A “**Container**” that represents the identity of the user and serves as the control point for all communication
 - **Applications** that interface with the container to communicate with other applications either locally or remotely
 - **Network facilities** that perform tasks ranging from media transcoding to multipoint conferencing to content streaming

Key Concept Behind H.325

H.325 **separates** the **application** logic and intelligence from the **user's control device / identity**, thus enabling any kind of application from any kind of device



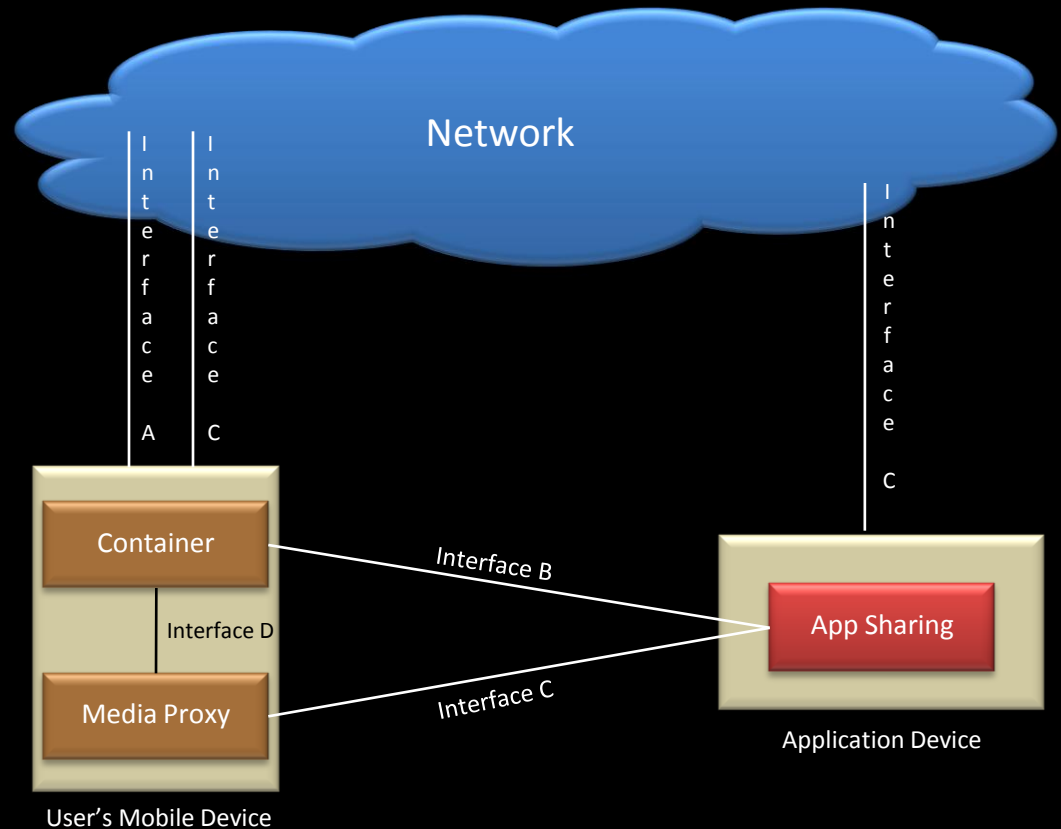
Signaling from the Container's Perspective between remote applications



Note: Media does not usually flow through the container. Rather, it flows end-to-end between communicating applications. However, the container may provide a media proxy function to enable end-to-end media flows when no other path exists.

H.325 Interfaces

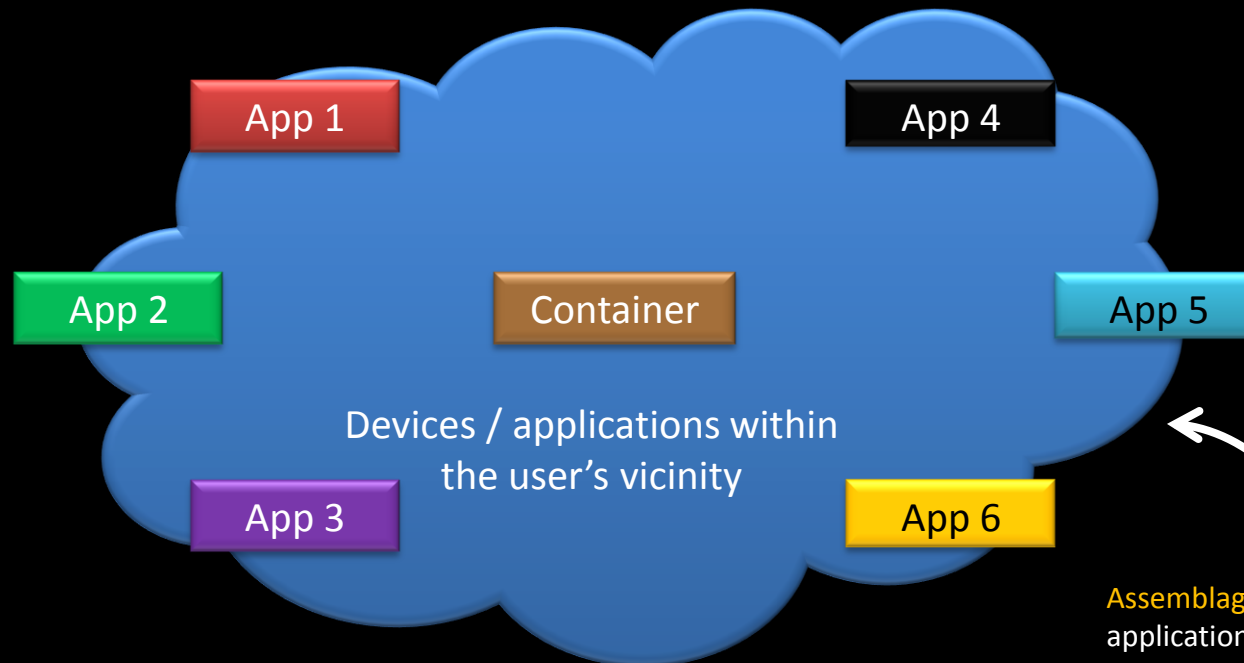
- ❖ **Interface A** – Container / Network signaling
- ❖ **Interface B** – Container / Application signaling
- ❖ **Interface C** – Media flows
- ❖ **Interface D** – Media proxy interface



Note: While the picture shows the “App Sharing” application with two Interface C’s, an application would only send media directly to the network or via the media proxy as dictated by the Container.

Concept of the Personal Network

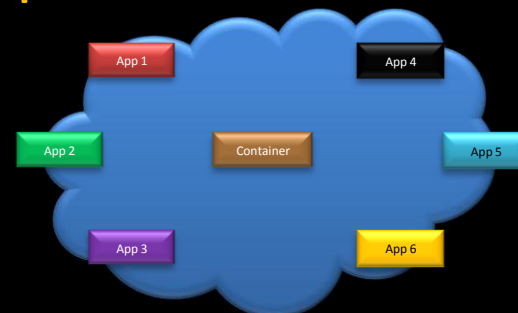
- ▶ Home
- ▶ Automobile
- ▶ Work



Assemblage: the collection of applications together with a container.

Personal Network In Brief

- The **Personal Network** is comprised of the **applications and devices** that are **within reach** of the user at a given time: at home, in the car, at the office, in the cloud, or wherever
- The devices within the Personal Network might allow one to present material via a projector, listen to or view locally generated content, exchange files, etc.
- **Any application or device** within the Personal Network **may communicate with other applications or devices** in the Personal Network



Personal Network and Mobility

- When a **user moves** from place to place, the **physical components** of the Personal Network might **change**
 - The projector or display at the office is great
 - The projector or display at a customer site is not so great
- Though physical components might change, the **interaction and experience should be consistent**; there should only be an enhanced or degraded performance based on the quality of the components
- Different applications used for any kind of communication, whether it is within a Personal Network or a Internet network, is referred to as an **“Application Set”**

More on the Container

- The “Container” represents the **user’s identity** to the H.325 network
- **Container** functionality *may be* integrated into network elements (e.g., traditional IP PBX), but would most likely be in a **mobile device** carried by the user (e.g., a mobile internet communicator)
- A **Container does not have application intelligence**
 - Serves as a timing source for synchronization
 - Coordinates communication within the assemblage and across the network
 - Does not know or care what applications are doing
 - May serve as a proxy for media

More on Applications

- **Applications** like voice, video, video games, file transfer, and whiteboard are enabled via separate applications that **may be co-resident** with the container or exist on physically separate devices
- **New applications** may be introduced without changes to the container or network elements
- Applications may be **upgraded independently** of other applications
- Applications can communicate with other applications **within the assemblage** (locally) or with applications across the network

Network Facilities

- Application functionality may also be realized with **local elements** that are within the user's proximity and with **functionality from the cloud**
 - Suppose one has a traditional TV with a set-top box. One could then have a video “receiver” in the cloud. Browsing video content available from any number of sources, that content could be sent to the cloud-based video receiver and then delivered to the traditional TV
- Network facilities might facilitate **transcoding**
- Network facilities would enable multi-user **conferencing**

The “Application Handover” Concept

- Moving **from voice** on a mobile **to Telepresence**
 - Imagine walking down the hall talking on a mobile phone
 - Walk into a Telepresence conference room
 - Place the mobile phone on the desk
 - The call then transitions automatically from voice to Telepresence with HD video, audio, and presentation
- **Content To Go**, and Taken on the Go
 - Imagine walking up to a kiosk where a video is playing
 - Press a button on your mobile device and the video moves from the kiosk to the Container (not a copy, per se, but the mobile device is now streaming content from the network or has it “paused”)
 - Walk into your living room and press a button to transition that content from the mobile device to your HD TV

Other Important H.325 Concepts

- **Event notification framework** that will allow applications (local or remote) to be notified of certain events
 - When a “call” arrives, a “lamp application” may be notified so that it may flash to alert the deaf user of an incoming “call”
 - Network-based applications will be made aware of when you arrive home from the office and could turn on soft background music
- **Application control interface** for any application is “remotable” to any other suitable display
 - This is envisaged as being implemented via XHTML
 - One should be able to control the TV from the container or control a video projection system from a PC, as examples

The Protocol

- It will be **different** than the previous generation
 - An interface between applications and the container
 - An interface between the container and the network
 - ITU will define a core set of applications following a similar design approach, but since the system imposes few constraints, application developers have a lot of flexibility in how they design applications
- Protocol will be **defined using XML**
 - Programmers already know how to work with XML
 - H.325 will likely use Efficient XML Interchange (EXI) for XML compression (from the W3C)*

* Still under discussion

A Simple Vision for H.325

- The **network** and the **devices** therein should serve to enhance our lives and **better enable people to communicate**
- The system will be an **extensible application platform**
- The system should **enable new modes of communication** as people create them, without the need to upgrade Container or network infrastructure for every new application
- Implementing and deploying new modes of communication **should be simple** – the platform deals with the mundane/complex parts
- One should be able to utilize a **multiplicity of devices**
- It is time for **multimedia systems to advance**

