Lesson 06
Synchronization Software—HotSync, ActiveSync and Intellisync
Synchronization software

- A synchronizer used for data synchronization as per configuration, domain-specific rules, and conflict resolution strategies.
- Synchronizer is used for remote as well as local (personal) area data synchronization.
Synchronization between the device and nearby device using Synchronizer.

For example, iPod or Nokia

Data synchronization

PocketPC or computer connected to device by a cradle, wireless Bluetooth, IrDA, or ZigBee protocol

Computer-specific platform, OS and data formats

Device-specific platform, OS and data format at each device
Synchronization software

- IntelliSync a synchronizer which provides synchronization with remote system as well as PAS
Personal Synchronization (PAS) software

- Synchronizes the mobile data copies with data copies on PC in the WPAN
- HotSync used in a mobile device when device operating system (OS) is Palm OS
- ActiveSync used when device OS is Windows CE
Personal Synchronization (PAS) software

- Connection through a USB (universal serial bus) port, serial port, or infrared port at PC
- The synchronizer can also connect to an Ethernet LAN
HotSync

- Software used for synchronizing handheld devices based on Palm OS with Windows- or Mac-based personal computers in a synchronizing architecture
- Organizes data and most programs in the device based on Palm OS
- Copies of the device data also listed at the PC in a backup list, so that these can be restored
HotSync

- An attribute bit (similar to dirty, invalid, or modified flags) at each copy (file) that sets when there is a change in the copy at the PC
- A backup program at the device, using the attribute, copies those copies from the PC, which have their attribute bits set. After copying is complete for a copy, the attribute bit is removed at the PC
Conduits in HotSync

- Each task which is synchronized uses a conduit program
- Auxiliary software for HotSync installed in PCs
- The auxiliary software can also be used to transfer photos, music, and other multimedia objects to the handheld device
HotSync

- It enables saving of settings, preferences, synchronize memos, tasks-to-do list, calendars, contacts, and data files
- Enables favourites, call history, and speed-dialling. The data can also be tuned with Microsoft Outlook
- Can be used to install new applications on the device
Palm OS device and HotSync

- Connects to the PC through a cable called HotSync cable or using a wireless connection which could be WiFi, Bluetooth, or infrared IrDA
- It also enables synchronization with remote systems
Remote System Synchronization through a PC with Palm device
ActiveSync

- Software from Microsoft for synchronizing mobile devices with Windows-based PCs
- ActiveSync 4.1 synchronizes data at the PC with devices based on Windows Mobile 5.0 or Windows CE.
- Also available for the Symbian OS platform
ActiveSync

- Synchronizes personal information (email, calendar, and contact information) on the mobile device even when the device is away from the PC
ActiveSync

- Also functions as personal sync server (PSS)
- PSS enables a mobile user to synchronize the PIM data set, which consists of address book, calendar, and tasks-to-do list, on the handset with PIM data on a PC or a laptop
ActiveSync PSS

- Integrates with Microsoft Outlook and Outlook Express on the PC, enabling email in Outlook to be transferred to the mobile device even when the user is on the move
ActiveSync

- ActiveSync synchronization between mobile devices and PCs is not restricted to communication through serial or USB ports or through the Bluetooth or IrDA protocols.
- A serial port may also be configured to support non-encrypted or encrypted (using secure connection configuration) communication.
Bluetooth ActiveSync partner

- PC can be configured as a Bluetooth ActiveSync partner
- Bluetooth communication sets a virtual COM port, which is utilized by ActiveSync for synchronizing with the PC, thus allowing the device to synchronize with the PC using Bluetooth
ActiveSync 4.x synchronizer

- PC with mobile devices with Windows Media, videos, pictures, music, and MS Office files
- Has a partnership wizard to help device users set up a synchronizing partnership easily
Conflict Resolution in ActiveSync

- Between different versions of files during data exchange and uses multiple service providers and service managers
Internet through a wired network or a wireless WiFi network

- Using PC connects to Internet the in a synchronization architecture
- The PC then stores copies of the data for synchronization with the device
- For example, the PC downloads music files and videos and synchronizes them with the mobile device
ActiveSync 4.x does not allow synchronization through direct Internet connection (TCP/IP connections using WiFi, WLAN, or dial-up telephone line). This is to prevent any external system from accessing the device and accessing the device data directly.
Device and remote system synchronization through PC

- Using ActiveSync in conjunction with Microsoft Exchange Server
- Microsoft Exchange 2003 Service Pack 2 with devices running the Messaging and Security Feature software for Windows Mobile 5.0 enables direct push
Intellisync

- Developed at the Intellisync Corporation (now acquired by Nokia)
- Synchronizes PIM data between mobile devices and the Internet
- Open architecture and can, therefore, be integrated with enterprise architecture
Intellisync

- Synchronizes email, calendar, Microsoft Outlook, and Lotus Notes
- Remote server Intellisync Wireless Email Express saves inbox, contacts, tasks-to-do list, calendars, personal travel information, weather forecasts, driving directions, etc. for each client, which can be updated while the mobile user is on the move
Intellisync

- Also supports meeting requests and viewing attachments with emails. It also provides wireless email and push email features on a mobile device, just as in a Blackberry mobile.
- Push email has push latency of 30 minutes.
Intellisync

- Enables enterprise connectivity features
- Provides security—it supports end-to-end encryption and password protection
Intellisync Desktop synchronizer

- Supports Microsoft Windows Mobile-based smartphones
- Supports most mobile device platforms and handheld devices based on Palm OS, Pocket PC, Symbian, BREW, and other mobile device operating systems
Intellisync

- Supports email, PIM synchronization, email accelerator, device management and file distribution using Systems Management/File Sync software, and synchronization with Microsoft Exchange Server.
Summary

- Synchronizer is used for remote as well as local (personal) area data synchronization
- HotSync for Palm OS using device
- Active Sync for Windows as well as Nokia device synchronization
- Saving of settings, preferences

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Summary

- Synchronize memos, tasks-to-do list, calendars, contacts, and data files
- Enables favourites, call history, and speed-dialling
- E-mail Synchronization
- PC downloads from Internet music files and videos and synchronizes them with the mobile device
Intellisync now from Nokia synchronizes local as well as remote.

Synchronizes PIM data between mobile devices and the Internet.

Open architecture and can, therefore, be integrated with enterprise architecture.

Enterprise data synchronization.

Security.
End of Lesson 06
Synchronization Software— HotSync, ActiveSync and Intellisync