CCNP BSCI Notes - Network Design

Full mesh formula: n(n-1)/2 Example: To create a mesh between 8 nodes, 8 * (8-1) / 2 = 28; 28 links are needed. Design concepts **Legacy Hierarchical Design Model**   Core - fast L2-switched backbone   Distribution - L3 switches   Access - dense L2 switches This failed to address issues such as redundancy, Internet and remote access, and locating services. *Switch block* design was introduced to add redundancy; this included redundant core and distribution switches and links per switch block. **Enterprise Composite Network Model** This new model was developed to address modern design considerations.   Enterprise campus   Campus backbone (previously the "core")   Building distribution (previously "distribution")   Building access (previously "access")   Management   Server farm (for internal enterprise services)   Enterprise edge   E-commerce   Internet connectivity   Remote access   WAN (internal links)   Service provider edge   ISP   PSTN   Frame relay, ATM, PPP for private connectivity **Intelligent Information Network (IIN)**   Phase 1: Integrated transport - the shift toward the ECN model   Phase 2: Integrated services - service virtualization (disassociation of services from individual machines)   Phase 3: Integrated applications - recognizing and combining high-layer traffic properties (for example, Network Access Control) **Services-Oriented Network Architecture (SONA)** SONA is the application of IIN ideas to enterprise networks.   Network infrastructure (IIN phase 1)   Interactive services (IIN phase 2)   Application (IIN phase 3) **Routing protocols**   Distance vector - a router will only exchange routes with a directly connected neighbor   Link-state - a router advertises a list of all its neighbors and its neighbors' networks; routers run SPF to determine the best path