



Black-Crypto-Red (BCR) was an experimental, end-to-end, network packet encryption system developed in a working prototype form by BBN and the Collins Radio division of Rockwell between 1975-1980. BCR was the first network security system to support TCP/IP traffic for IPv3, and it incorporated the first Data Encryption Standard (DES) chips that were validated by the U.S. National Bureau of Standards (now called NIST).<sup>[6]</sup> It provided automated, KDC-based key management and access control (as later adopted by Kerberos and Blacker),<sup>[7]</sup> and supported IP header bypass.<sup>[8]</sup>

## Blacker

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The first Blacker program began in the late 1970s, with a follow-on eventually producing fielded devices in the late 1980s.<sup>[9]</sup> It was sponsored by the National Security Agency as a very high assurance (A1), multi-level security system, and developed by SDC (software) and Burroughs (hardware), and after their merger, by the resultant company Unisys.<sup>[10]</sup>

## Internet Private Line Interface (IPLI)

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The Internet Private Line Interface (IPLI) was created by BBN as a successor to the PLI. It was updated to use TCP/IP (IPv4) and newer COMSEC technology (KG-84), but still manually keyed.<sup>[11]</sup> They were intended for use in the Defense Data Network and also in DARPA Low-Cost Packet Radios in the SURAN project.

## References

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