

# Kofax Communication Server

## Branch Box Hardware Documentation

Version: 10.3.0

Date: 2019-12-13

The KOFAX logo is rendered in a bold, blue, sans-serif typeface. The letters are thick and closely spaced, with a clean, modern aesthetic. The 'K' and 'F' are particularly prominent due to their size and weight.

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# Table of Contents

<b>Chapter 1: Preface</b> .....	<b>4</b>
<b>Chapter 2: Benefits, Strengths</b> .....	<b>5</b>
<b>Chapter 3: Structure of the Product</b> .....	<b>6</b>
<b>Chapter 4: Features</b> .....	<b>7</b>
Overview.....	7
Details for Models 202/205-LAN and 305-WAN.....	7
<b>Chapter 5: Prerequisites</b> .....	<b>9</b>
Limits.....	10
Examples.....	10
<b>Chapter 6: Pre-Installation</b> .....	<b>11</b>
<b>Chapter 7: Installation</b> .....	<b>12</b>
<b>Chapter 8: Compatibility</b> .....	<b>13</b>
<b>Chapter 9: Performance, Scalability, Fault Tolerance</b> .....	<b>14</b>
<b>Chapter 10: Conformance to Laws and Directions</b> .....	<b>15</b>

# Preface

**Kofax Communication Server (KCS)** offers a single solution designed to help unify and integrate communication resources within an Enterprise. By using standard KCS modules and building upon its open interfaces, existing applications can connect to internal and external communication via fax, voice, email, X.400 or telex.

- With **Least Cost Routing (LCR)**, KCS can reduce communications and operations costs by using the corporate Wide Area Network (WAN) to distribute information among different branch offices throughout the world. All KCS systems within a LCR network normally provide local connection to external communication services as well as integration with the local internal messaging infrastructure. Typically LCR is used by enterprises consisting of a head office and many self-contained **branch offices with a locally managed IT infrastructure**.
- **Small branch offices** may also need local connection to external Fax-services, mainly to provide local access numbers to their customers. Integration within the corporate IT infrastructure is done in the central office where it can be efficiently controlled and maintained. In such cases TC Branch Box is the simple, powerful and efficient solution for organizations that want to keep **central control of external communications** while **providing local service to their customers**.

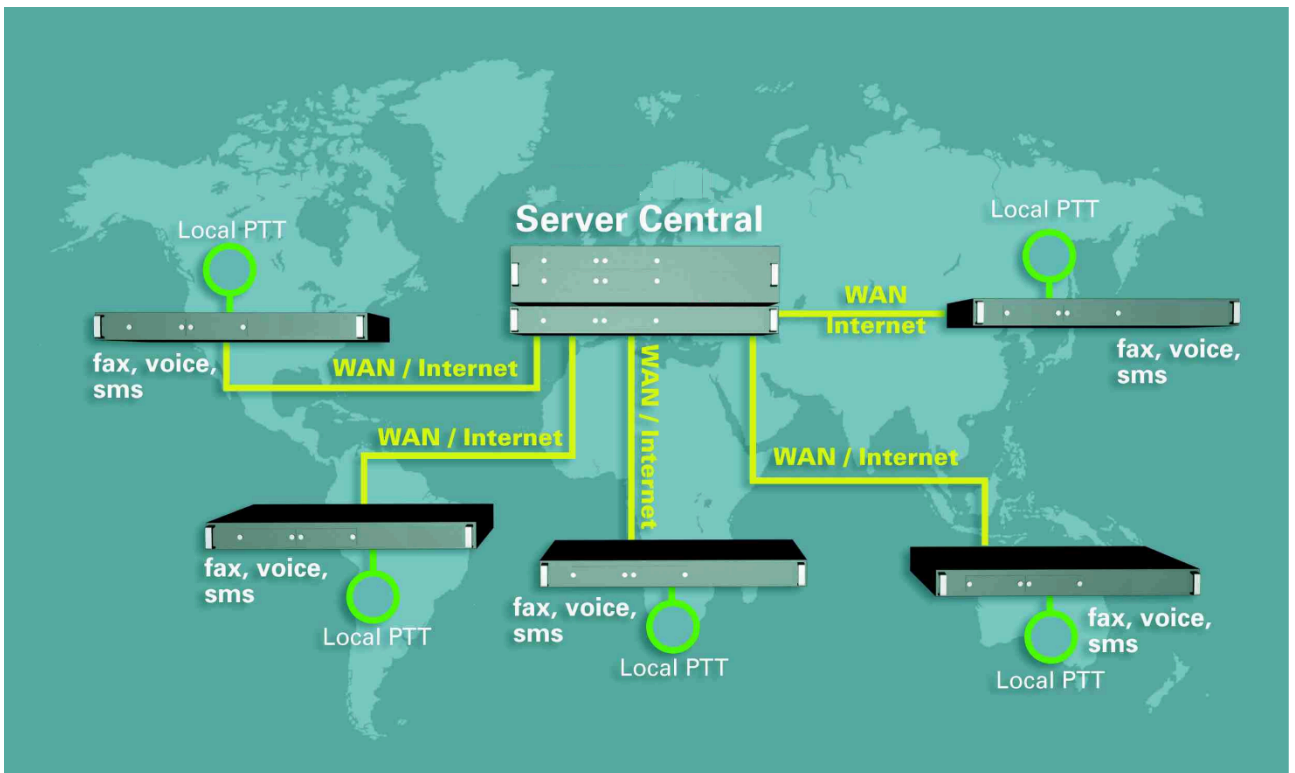
## Chapter 2

# Benefits, Strengths

- **Branch Box** provides local fax access numbers to all customers with local transmission and reception of fax messages.
- Customers are offered the expected local service while full integration with the IT infrastructure saves cost for the enterprise.
- Absolutely no local maintenance within the Branch Office. A Branch Box can be installed or replaced with minimal technical know-how.
- Back-office integration with, for example, Lotus notes, Microsoft Exchange or SAP is only required at the central KCS system(s) located in the main office(s).
- Standard KCS cabinet, 19" rack-mountable.
- Fully integrated within the **Kofax Communication Server** Architecture: one solution, one point of maintenance, one communication partner: Kofax.
- The Branch Box Model 202-LAN offers additionally Telex capability and access to Hosts via Twinax, Coax and SNA (on request).

## Chapter 3

# Structure of the Product



BranchBox application example

## Chapter 4

# Features

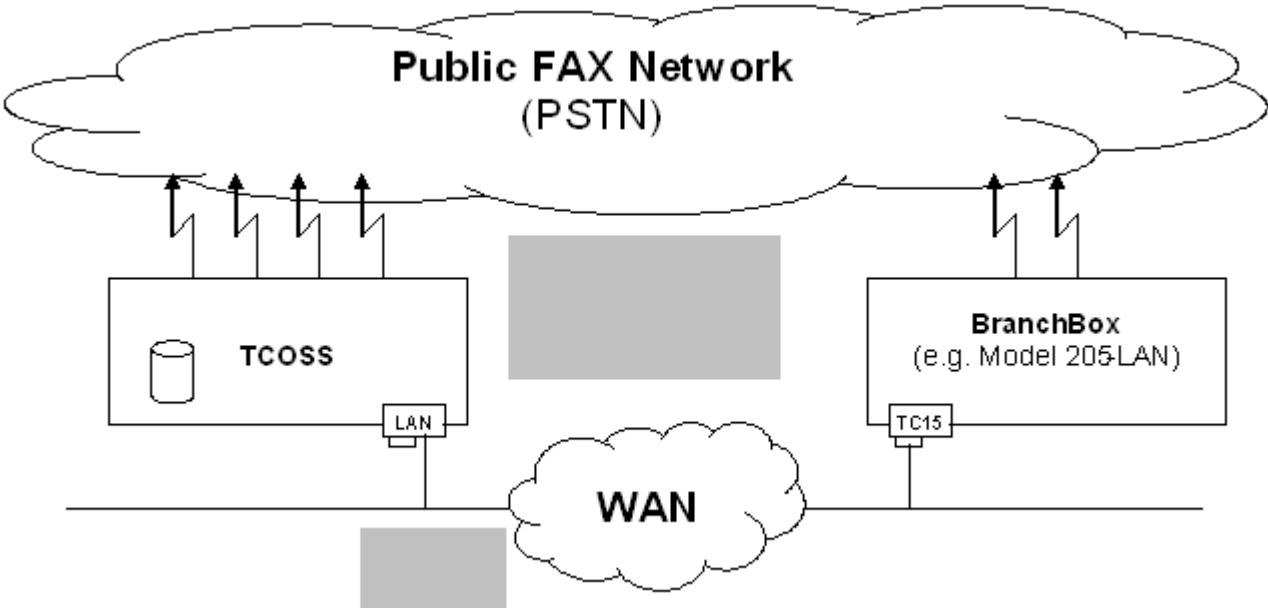
This section describes the features of Branch Box.

## Overview

- Single box branch-office solution with plug and play installation. Branch Box only requires power, telephone line and LAN connection.
- No local integration required with local back-office like Lotus notes or Microsoft Exchange Server.
- Standard LAN connection, 10Mbit Ethernet
- Model 305-WAN: Fax or Voice communication with up to 4 BRI lines (PRI not supported).
- Model 304: Fax communication with 4 analog lines
- Model 205-LAN: Recommended for up to 4 Fax lines per Branch Box (maximum = 20 with 5xTC15+TC20), depending on available bandwidth and Network quality. Full support of standard KCS ISDN (BRI), Analogue and E&M interfaces (TC3x). Fax messages are transmitted between KCS server and Branch Box using real time fax technology. Messages are only stored on the fault tolerant central KCS server. The Branch Box is only used for transmission and reception of messages.
- Model 202-LAN: For up to 14 Telex lines per Branch Box.
- Back-office integration with (for example) Lotus notes, Microsoft Exchange or SAP is only required at the central KCS system(s) located in the main office(s). No installation, integration or maintenance is required whatsoever in any of the branch offices.
- The single storage architecture guarantees that messages received are always stored at the central server and can never get lost in any of the branch offices. Optionally, the KCS Archive server provides centralized off-line archiving of all messages.

## Details for Models 202/205-LAN and 305-WAN

A Branch Box consists either of a standard Model 202/205 line server with LAN connection instead of optical link connection or a Model 304/305 with built in LAN interface. The LAN link for Models 202/205-LAN is provided via an interface board TC15/TS15 that provides the connection between the Fax/Telex interfaces and the TCP/IP based WAN. The master KCS server is configured to use the standard LAN adapter to communicate with the Branch Box. Assuming the appropriate bandwidth and latency is available; this allows virtually unlimited distance between the master server and the line server:





## Chapter 5

# Prerequisites

### Background:

The branch box is a pass-through device; it does not locally store messages. This ensures the highest transaction integrity: each page of a received fax is stored on the central KCS server before it is acknowledged to the sending fax machine. The same is true for sending: each sent page is immediately logged on the central KCS server. This means that with Branch Boxes you can extend the high data and transaction integrity of your central KCS (Tandem) Server to all your remote locations.

The branch box is connected to the central KCS server via a TCP/IP (WAN) connection. Since it does not locally store messages, its availability directly depends on the availability of the WAN connection.

To ensure interruption-free fax (or Telex) transmission the WAN connection has to provide a minimum availability of bandwidth and a maximum turnaround time as specified below. Kofax provides software, tcpMeter, to measure your WAN characteristics for each location before installation. tcpMeter also gives recommendations on how to improve your network if this seems necessary.

Important note: Despite all efforts it might happen in a WAN that available bandwidth drops temporarily below the specified limits. The only result of this can be a break in transmission, just as if the fax was sent or received over a low-quality phone line. Transaction integrity is never compromised – *messages can never get lost as result of network problems, sending and receiving status is always correct.*

- Model 304, 305-WAN and 205-LAN: TCP/IP based WAN with 30 kBit/sec of available bandwidth per sending/receiving Fax line and worst-case packet latency of max. 1000 ms.
- Network characteristics must not degrade during operation of a Branch Box. All transmission breaks that are caused by bad WAN performance are logged by the KCS system.
- Central KCS server at head office with TCOSS 7.38.07 or higher for Model 304, 205-LAN; TCOSS 7.47.01 or higher for Model 202-LAN, TCOSS 7.46.10 for Model 305-WAN.
- A permanent Ethernet connection (10baseT).
- A static IP address.
- The Model 205 branch box is mainly targeted at installations of up to 4 fax channels. For higher channel counts an additional Ethernet connection, TC15 and IP address are required for each additional 4 channels. (E.g. 2 Ethernet connections for up to 8 fax channels).
- For Model 202-LAN with Telex, Coax, Twinax or SNA interfaces use the following calculation scheme.

Service	Interface	LAN/WAN Bandwidth kBit/sec	Max. packet latency ms	Max. count of channels per TC/ TS15	Net data rate Baud
Telex	TS20/22/26/28	10	100	14	50
COAX *)	TS73	50	100	2	38400
TWINAX *)	TS72	50	100	2	38400

Service	Interface	LAN/WAN Bandwidth kBit/sec	Max. packet latency ms	Max. count of channels per TC/ TS15	Net data rate Baud
SNA *)	TS76	20	100	7	9600
ASYNCR	TS70	50	100	2	Limited to 38400

\*) Legacy COAX, TWINAX and SNA interfaces are supported on request – contact Kofax staff before planning such a solution.

## Limits

Max. 140kBit/sec Bandwidth per TC/TS15

No Telex chaining supported with TS15 (use separate TS15 for each cabinet).

Primary rate ISDN (PRI) is not supported with Branch Box (use Model 305 Line Server).

## Examples

First example: a system with 1 asynchronous line and 4 Telex lines.

$1 \times 50 \text{ kBit/sec} + 4 \times 10 \text{ kBit/sec} = 90 \text{ kBit/sec}$  required bandwidth. This is  $< 140$  so use 1\*TC15, max. packet latency 100ms.

2nd example: a system with 2 asynchronous lines and one Twinax interface -  $2 \times 50 \text{ kBit/sec} + 50 \text{ kBit/sec} = 150 \text{ kBit/sec}$  - too much for one TS15. So split the 3 channels over two Models 202. Total bandwidth requirement will be 150kBit/sec, max. packet latency 100ms.

## Chapter 6

# Pre-Installation

Kofax provides a measurement tool (tcpMeter) to gather information on the quality of service offered by the WAN. The tool measures available bandwidth, latency and availability of the WAN. Before installation of the Branch Boxes WAN statistics should be collected for a certain period of time (recommended: one week). Based on these measurements it can be decided on how many channels of a Branch Box can be supported at a specific location or if further tuning of the WAN is required before installation. This software runs at the central server and the branch office.

## Chapter 7

# Installation

- Standard installation of central KCS server.
- One time central configuration of Branch Box WAN IP address, before shipping to Branch office.
- PBX specific configuration (Fax channel configuration) of Branch Box at central system (standard TCOSS channel configuration).
- PBX in Branch Office to be prepared by local PBX technician.
- Central configuration of LCR rules to route outbound Fax traffic to appropriate Branch Office (with rr99).

## Chapter 8

# Compatibility

Fully compatible with standard KCS solution: Voice (BRI and analogue), FAX (BRI, analogue, E&M and Bell DID), Telex.

## Chapter 9

# Performance, Scalability, Fault Tolerance

- No specific limit to the number of Branch Boxes that can be connected to a single TCOSS server (theoretically all 176 fax lines could lead to single-line Branch Boxes).
- Authentication will be done when a connection between TCOSS server and Branch Box is built up. Configured passwords of Server and Branch Box have to match.
- Tandem server is supported. No local buffer in the Branch Box, so connection failures never lead to loss of data.

## Chapter 10

# Conformance to Laws and Directions

- Standard approvals for TC20+TC3x Fax interfaces
- Standard approvals for Models 202, 205 and 305